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CANE FIELDS AND ROYAL PALMS. LOW LIMESTONE HILLOCKS IN THE BACKGROUND

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THE BIRDS OF CUBA

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WITH FOUR PLATES

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INTRODUCTION

It was my original intention to write this work in collaboration with an old friend, Winthrop Sprague Brooks, and we prepared together a card catalogue of the Cuban birds in the Museum of Comparative Zoölogy, as a preparatory step to recall the material to mind. The scope of the project, however, was changed, and press of work in separate institutions made it impossible for us to do it together. I have, therefore, essayed the task alone, and have concluded not simply to prepare a paper which would describe my Cuban material but rather to attempt a work which may be useful to the increasing number of amateurs of field ornithology who now visit Cuba, for these serious observers find nothing accessible in English which will give them any clue to the birds they may see. It may serve also to answer some questions which I have often been asked by the ever increasing number of English-speaking residents in Cuba and the Isle of Pines.

For a charming companionship and a patient tolerance of my erratic ways I owe more to Winthrop Sprague Brooks than I can well express. For many years it has been Brooks' good fortune and mine to visit Cuba frequently, and during the War we were there for long periods of many months' duration. Our duties during this time did not permit of much collecting, but constant travelling afforded many chances for observation. On previous and subsequent journeys we have made extensive collections, all of which are now in the Museum of Comparative Zoölogy, except such specimens as have been distributed in exchange.

It is difficult to describe a varied scenery, especially one that is in great part really tropical, so that it may be reasonably visualized. This is particularly true of a country which possesses the manifold aspects, each in the highest degree peculiar, that combine to form the impression which Cuba makes. No other Latin-American country affords the temporary opportunity to enjoy the wholly foreign way of living that Cuba offers to thousands of Americans. They leave Key West, whence the majority set sail, with a vivid impression of the futility of clapboards and galvanized

iron either to charm the eye or to offer decent protection from a torrid sun. A few hours of gorgeous painted sea, blue daubed with ivory white, and Havana breaks into view with an almost inconceivable contrast: Castle and forts, some begun long before Jamestown or Plymouth came into being, and a great yellow and white and blue city, low, narrow-streeted and porticoed, still topped in part with the old red-tiled roofs, Spain's most decorative legacy to the Americas. And yet the Cuba of Havana is now hybrid, and modified not for the better, unfortunately. Nevertheless, the old Cuba of Colonial days, of simple hospitality and sincere courtesy, still exists on many a distant ranch and in ancient towns but little changed by several centuries' passing. So it is also with the landscape. The environs of the cities along the northern coast of the central Provinces offer not only the beauty of novelty but the charm of intensive tropical cultivation. The broad groves of royal palms, at once majestic and graceful, invade the very suburbs of the cities and the great red-green stands of mango trees dispense a shade more dense and welcome than do our own maples and beeches. Still all this is not Cuba, and the bird lover from the North is surely disappointed at the few, though wholly satisfactory strangers which he meets. Anis by the roadside, with their languid volplaning flight, Ground Doves, Cuban Grackles, and perhaps an Oriole in a piñon hedgerow, are about all he can expect.

If the reader would but charter an old-time *guardaño*, and cross Havana harbor and walk quietly through the almost endless jungle of beach grape and Ipomea stretching far to the eastward of Morro Castle, he would soon strike acquaintance with the Todies, the Gray Kingbirds, Ricord's Hummer and some others — only a few to be sure — of Cuba's choicest offerings to the Northern stranger. Few, however, know that this good fortune is at their beck and call for a *real* or two. Those who may fare afield to La Providencia or Toledo, sugar plantations easily accessible, may chance upon the winter flocks of the common Cuban Redwing which spend their days trilling metallically in the orange trees about the mill yards. Migrants they may see in swarms, Palm Warblers, Black-throated Blues and Redstarts, until they wonder how all North America can furnish such hordes of birds too seldom seen at home.

I must try, however, to convey some impression of what may be seen by the wanderer who, tolerant of mediaeval sanitation and the many petty hardships of primitive country life in the Spanish-American tropics, is willing to go out into the hills and swamps and forest, yearly growing more inaccessible but where primeval conditions may still be found. In the

fastnesses of the Sierra Maestra, the Zapata Swamp, or in western Pinar del Rio, the Cuban peasantry live a life as simple and unvexed by modern change as may be found in those more old-time sisters of Cuba, the Republics of Central America.

The felling of the lowland forest has, of course, been going on since early Colonial times, but the process has been constantly accelerated since Cuba became independent. A steady influx of American capital has meant a constant increase in the number of sugar mills and these have demanded more cleared land on which cane might be grown. During the War the price of sugar rose to a point which led to the clearing of enormous areas of forest land, so much in fact that now very little lowland *monte alto* (tall woods) remains. There are still great areas of the granitic or serpentine savanna lands which are unfit for agriculture, and these regions bear a characteristic vegetation of the jata and cana palms and support only a small though highly characteristic bird population. The Cuban forest was never the luxuriant *foresta real* of Central or South America, but it originally covered all the vast areas of rich calcareous soil, and even where the rainfall was somewhat scanty there was a heavy and varied sylvan growth. There is fine forest still on the higher mountain ranges of the Province of Oriente; and as these are steep and as yet inaccessible, they will for some time to come afford a refuge for many species. The sparse and scattered growths of pine have been badly damaged by fires which have spread from pasture lands, burned regularly to provide fresh young grass for grazing stock.

These few introductory remarks require no further expansion to make it evident that vast changes have taken place in Cuba in those very parts of the Island where the richest and most varied fauna was to be found. The birds — there were few mammals — have suffered more than other groups; and island species, as is well known, are often prone to dwindle when changed environment comes to pass. The changes have come, the birds are going, and before many years ornithological conditions in Cuba will be comparable to those of Hawaii, though perhaps on a less wholesale scale. Still some forms today are truly *rarae aves*, and in a few more decades they will be found only in the larger museums. It is now nearly thirty years since Gundlach published his classic 'Ornitología Cubana,' and it is time that another record should be made of man's stewardship over the Cuban birds. The story is tragic but wholly inevitable, and as there is no organized support for such measures as the establishment of bird sanctuaries, no improvement is to be expected, only the reverse.

One zoögeographic peculiarity will become more and more obvious to the reader, and this is the fact that for some inexplicable reason a number of sharply defined species and subspecies are found in the eastern Province of Oriente and there only. The exact boundary of these local forms is not as yet accurately defined, and in some cases there may be intergradation with the allied races to the westward, while in others there almost certainly is not. The probable origin of these pairs of contrasted types is difficult to postulate, but the more luxuriant vegetation and somewhat greater heat and rainfall in Oriente, may, in part at least, account for the development. A detailed study of the exact ranges and their boundary conditions will be very well worth while.

In this paper each species is given the consideration its interest seems to merit. Those which show no change of status since Gundlach's time only exceptionally require more than briefest mention. Some taxonomic matters are considered. The order is that of Ridgway's 'Birds of North and Middle America.' Much useful information has been secured from Mr. Todd's 'The Birds of the Isle of Pines,' Annals Carnegie Museum, vol. 10, pp. 146–296, and alleged to have been issued January 31, 1916.

HISTORICAL

Don Ramon de la Sagra was long director of the Botanical Garden in Havana. Better known as historian and writer upon political economy than as a botanist, nevertheless he was an indefatigable accumulator of material illustrating all of the natural products of Cuba. De la Sagra brought his collections to Paris, planning a great series of monographs to comprise a 'Histoire Physique, Politique et Naturelle de l'Ile de Cuba.' This elaborate work finally appeared in parts, both in Spanish and in French, and the volume which interests us, viz., 'Ornithologie,' was entrusted to the competent preparation of M. Alcide Dessalines d'Orbigny. This versatile naturalist not only worked out and described the species represented in de la Sagra's collection, but he added an account of those who had previously written upon Cuban birds, paying just tribute to the immortal 'Historia general y natural de las Indias' of Gonzalo Hernandez de Oviedo y Valdés, the first impression of which appeared in Toledo in 1526. The many others whose writings contributed to a more thorough knowledge of Greater Antillean birds, are adequately dealt with, and as

the 'Histoire' of de la Sagra is to be found in the larger libraries, there is no reason for repeating here what d'Orbigny summarized to 1840.

Ten years later Juan Lembeye, an Havana schoolmaster, published his 'Aves de la Isla de Cuba' (Havana, Imprenta del Tiempo, 1850). This, unfortunately, like so many Latin-American scientific works, is largely a re-wording of d'Orbigny's work, with the addition of notes and descriptions of new forms supplied by Gundlach, and of plates plagiarized from Audubon. Neither is given credit, for notes supplied or plates copied. Gundlach, whose modesty and generosity exceeded his industry, if such were possible, wrote in 1877 (Contribución de la Ornitología Cubana, Supl. to Ann. Hav. Acad., through many numbers in 1876–77), not censuring Lembeye but saying that, as he had contributed to perfecting the 'Aves de Cuba' by supplying notes and descriptions, so had he also been in part responsible for some of its errors. Then he proceeds, very painstakingly, to correct this shabby work and to bring it to accuracy. Lembeye's work today is a great bibliographic rarity, but it offers little of interest to the general student.

Two foreigners lived in Cuba, who contributed much to advance a knowledge of its zoölogy. One was William S. MacLeay, an Englishman, resident for some time in Guanabacoa near Havana. His life in Cuba has been well described by Dr. Mario Sanchez (Mem. Soc. Cubana Hist. Nat., 'Felipe Poey,' ser. 2, vol. 2, p. 73, 1916).

The other and far better known sojourner was Johannes Gundlach, a German, one of the most fascinating characters who ever visited America. A fervid, devoted zealot, modest, frugal and industrious, he lived a long, useful, itinerant life of poverty, wandering from time to time to La Fermina where the de Cardenas family always gave him a home. Later on, in Gundlach's old age, the rich planter's clan fell into evil days and was saved from misery by Gundlach who sold his precious collections to help his friends. Ramsden has written a sympathetic biography of the dear old man, based largely on Dr. Carlos de la Torre's personal reminiscences (Ent. News, vol. 26, pp. 241–260, 1915).[1] Gundlach's memory is revered today by every peasant who remembers him, and they are legion.

Dr. Henry Bryant visited Cuba in 1864, and while his collection, now in the Museum of Comparative Zoölogy, shows that he shot and prepared birds with his usual indefatigable zeal, still no report upon this voyage was ever prepared.

In 1886 C. B. Cory went to Cuba, met Gundlach, and visited his

[1] Gundlach came to Cuba as a young man, in 1839, and died there in 1896.

museum at La Fermina. On his return he figured Gundlach's remarkable Ivory-billed Woodpecker with the deformed bill. The upper mandible grew monstrously long, following an injury, and Gundlach was told that the unfortunate female was fed regularly by its mate, after the long and curled bill had grown so that the bird could not secure its own food (cf. Auk, vol. 3, p. 374, 1886). Gundlach nevertheless believed that it was able to break open white ants' nests, and thus feed in spite of its misfortune.

Frank M. Chapman had the good fortune to get his first impressions of tropical nature in Cuba, for he visited Trinidad in 1892. He made only a short stay, but gathered a valuable collection which was the basis of a useful report (Bull. Amer. Mus. Nat. Hist., vol. 4, pp. 279–330, 1892).

After the American Occupation Messrs. William Palmer and James H. Riley visited Cuba in the interest of the United States National Museum. Both collected together in Pinar del Rio Province and in the Isle of Pines, while Palmer later visited Baracoa in Oriente.

In 1904 W. R. Zappey visited the Isle of Pines, and incidentally secured a few birds in Cuba. The various workers in that Isle have all been reviewed by Todd in his excellent 'Birds of the Isle of Pines,' already mentioned.

ORNITHOLOGICAL COLLECTIONS IN CUBA

There are two ornithological collections in Cuba of superlative importance. The first is the Gundlach collection which contains those birds which he reserved for himself after his generous distributions to scientific correspondents. This collection is beautifully mounted, and is kept in permanently sealed cases in a dark room, opened, however, upon request, in the Instituto de Segunda Enseñanza de la Habana on Obispo Street near the Plaza de Armas. That this collection might be kept intact, and that no surreptitious purloinings for purposes of sale might take place, Gundlach specified that these cases be kept forever sealed. The collection is still intact, and there has been no apparent ravaging by insects. It is the property of the Government, having been purchased by the Spanish

Crown when Gundlach needed funds to relieve the distress of his protector's family. The Gundlach collection is essentially complete. Exact localities, however, are usually lacking.

Dr. Charles T. Ramsden of Guantanamo possesses a mounted collection and a large collection of modern skins, nearly all of which were beautifully prepared by the late Oskar Tollin, who was in Ramsden's employ for many years. The greater part of his material has been got in the Oriental Province, but Ramsden has many birds from other parts of the Island, obtained in exchange. This is the only modern scientific collection in Cuba. There is said also to be another much older collection in private hands in Santiago, which I have not yet visited. This, however, is said not to contain any of the excessive rarities.

There are small collections, usually of birds bought abroad but with a few local species, in the other Provincial Institutes at Pinar del Rio, Matanzas, Santa Clara, Camaguey and Santiago. There is a small collection, by no means noteworthy, in the Jesuit Colegio de Belen in Havana, while there are also collections of birds, which contain some of the rarer species, in the cabinets of the Havana Academy of Medical, Physical and Natural Sciences and of the National University.

One museum remains to be mentioned, and that is the local municipal museum of Cardenas. Here, with almost no State aid and even less private encouragement, Doctor Rojas, the creator of the institution, has accumulated a really remarkable lot of objects representing the political and natural history of Cuba.

GEOGRAPHY AND GEOLOGY

The casual visitor may possibly have neither the time nor the inclination, and more often no opportunity, for an extensive examination into the physiographic conditions to be seen in Cuba. Nevertheless it is worth while to try to review briefly the views which have been presented by geologists, as a preface to an attempt to outline the several characteristic and sharply differentiated environmental conditions which are sure to be encountered by the traveller. My data have been gleaned largely from

the writings of Hill (Bull. M. C. Z., vol. 16, pp. 243–288, pls. 1 and 2, 1895), from the report made to General Wood by Hayes, Vaughan and Spencer (1901, pp. 1–117, pls. 7–29, maps, etc.) and from several papers by the Spanish engineer, don Manuel Fernandez de Castro. The best map of Cuba is the large one in two sheets prepared by the United States War Department (War College Division, General Staff, 1911), and an excellent local geography also is obtainable in Havana: 'La Geografia de la Isla de Cuba,' by Aguayo and de la Torre, which may be bought at La Moderna Poesia, a bookshop at 133 Obispo Street.

The early underlying foundation of the Island consists of ancient metamorphic and igneous rocks, mostly serpentines, diorites and schists, which have been exposed by erosion over wide areas (the savannas). Such areas do not reach to the very shores, except about Santiago. These rocks formed an ancient land which was long exposed. De la Torre, in 1910, described Jurassic fossils from western Cuba, confirming Humboldt's and de Castro's statements as to the existence of deposits of Jurassic age in Cuba (reprint from Annales de la Acad. Habana, 1910, pp. 1–33, 21 pls.). These of course were marine deposits, probably laid down in shallow water. This fauna has recently been studied in detail by Miss O'Connell and shown to be Upper Oxfordian, hence belonging low in the Upper Jura. Now recently Barnum Brown has traced an Upper Jurassic shore line, showing that part of the Island, at least, had emerged prior to this period. Besides these early rocks, Cretaceous formations have been observed extensively along the central axis of the Island from Havana to Santa Clara. Fossils (Hippuritids, *i.e.*, Barrettia) of Cretaceous age are abundant in Camaguey.

This land mass, already of complex structure, was submerged in early Tertiary times and overlain to a considerable depth by beds of limestone of marine derivation. Whether all of the Island was actually submerged at the same time, I doubt from faunistic evidence, since some very ancient types still persist unextirpated. Toward the close of the Tertiary the emergence was completed, and during the process folding and warping took place on a very great scale. During Pliocene and Pleistocene time there were various regional movements of uplift which, combined with extensive erosion, have resulted in giving the Island its present conformation. Hill declares that he has found no evidence that Cuba "since its earliest history (the Mesozoic) has had land connection with the United States." In this I incline to agree upon zoögraphic evidence as well. I am, however, less acquiescent when he adds "that he has no positive evidence

that it has been connected with our continent at all, and has only hypothetical evidence that the Pre-Tertiary land may have once extended toward the Yucatan peninsula, and that it was only then, if ever, that the Antillean and Cordilleran islands were united." Since Hill's time the fauna, living and extinct, has been much explored, and vertebrate fossils have been found upon Cuba, Haiti and Porto Rico, which indicate a later continental union, and to this view many geologists are now more lenient. In fact Vaughan, a really open-minded person, has quoted Miller saying of the Antillean mammals, especially the hystricine rodents: "They suggest direct descent from such a part of a general South American fauna, probably not less ancient than that of the Miocene, as might have been isolated by a splitting off of the Archipelago from the mainland. Of later influence from the continent there is no trace." To be sure Vaughan has not declared this view definitely supported by the geologic evidence, but he does not on the other hand hold it to be excluded by the geology (cf. 'A Geological Reconnaisance of the Dominican Republic,' Mem. Geol. Surv. of the Dom. Rep., 1921, pp. 1–268, pls. 1–23). I myself have always maintained that there was no question as to the past continental connection, and this view is constantly gaining ground and meeting with less opposition.

Let us return now to the limestones, which are of particular interest to the zoölogist, for it is to their presence that the marvellous development of land mollusks is due, while these areas also support or have given rise by erosion to the soil which supports or formerly supported the rich and varied forest in which the majority of the autochthonous birds live. The limy rocks form a veneer over the old metamorphic base. Their continuity is broadly interrupted by complete erosion over wide areas along the central axial region, and "only the low portion adjacent to sea-level is covered by later deposits" (Hill, l. c., p. 251). Limestone also caps the summits of the high ranges, often fantastically eroded into *mogotes*, or outstanding butte-like remnants of larger masses of the rock. De Castro declares the limy deposits to be of Eocene, Miocene and Pliocene ages, and this view is shared by Hill.

The two sorts of highlands in Cuba are sharply different from each other. The eminences called *sierras* or *cuchillas*, sharp, ragged and steep, are remnants of the old limestone covering carved by erosion. There is some belief expressed that the Sierra Maestra is of a different series from any of the other ranges. My observations are that it is capped with eroded limestone, *diente perro* (dog-tooth), very similar in character to the other major uplifts. In sharp distinction to the *sierras*, either wholly of limestone

or capped therewith, stand the *lomas*. Sterile, rounded hills these, they represent inequalities of the ancient metamorphic substratum from which the limestone has been worn away.

The traveller will soon notice that ridges and ranges of limestone are in general stretched along the north and south coasts with the exception of relatively undissected remnant-massifs, which are scattered. Thus, as if the Island had been folded longitudinally, the uptilted limestone has been most worn away along the central axial region, leaving the tilted and cut-up remnants near the coasts, and allowing the igneous and metamorphic base to appear as areas of semi-arid savannas which are scattered nearly the whole length of the Island except in the Province of Oriente. In this region the two main local mountain systems are very high and extensive, and their detritus has rendered fertile the rich Cauto Valley and the Guantanamo Basin, leaving but small areas of savanna land, called here *saos*, about Jobabo and Bayamo, and near Santiago itself.

The drainage system of Cuba is extensive, as is characteristic of a land where rain falls torrentially at certain seasons, and which was probably even more humid in the past. The streams usually flow from the central back-bone toward the north and south coasts. Here and there, owing to the permeability of the limestone or *caliza*, the drainage may be underground. Disappearing streams and sink holes are commonly to be observed. Indeed I recall that in the Valley of Luis Lazo the river flows directly under one of the high limestone ranges. This river has a name which is probably of Indian origin, the Cuyaguateje. The natives, however, declare the origin to have been *el rio cuyas aguas teje*—the river whose waters weave. In such a country, as may readily be believed, lakes and ponds are few.

Americans do not usually realize that Cuba is really a large country. The Island lies wholly within the tropics, and is no less than 730 miles long and from 20 to 90 miles wide. The area of the Republic, including the dependencies, such as the Isle of Pines and Cayo Romano, is probably about 44,000 square miles, thus about equaling the State of Pennsylvania in size. It has in addition a complicated coast-line reliably estimated at about 6,800 miles. If a map of Cuba were to be superposed on one of the United States of the same scale, and Cape San Antonio, the western extremity, put down at St. Louis, then the easternmost, Cape Maisí, would just reach Jacksonville, Florida.

The following outline, based upon Hayes, Vaughan and Spencer, but somewhat amended, serves to summarize the geologic history of Cuba, and may well close these notes.

Time	Rocks	Events
Paleozoic?	Serpentine and granite	Intrusion of igneous rocks into sediments now mostly eroded away.
Jurassic	Limestone with fossil ammonites	High uplift and erosion. Land possibly connected Florida and northeastern South America.
Cretaceous	Hard, grayish limestone, underlain by arkose	Subsidence, probably of the whole Island, but not all at once. Some volcanoes may have been active.
Eocene	Limestone, glauconitic sands, etc.	Subsidence. Active volcanoes, causing interbedding of volcanic and sedimentary rock. Probably intrusions also.
Oligocene (*a*) Lower	Radiolarian earths	Deep subsidence of at least portions of the Island.
(*b*) Upper	Limestones, calcareous marls, some conglomerate	Submergence of the whole Island excepting occasional peaks and lines of hills along the northern and southern portions of Santiago Province.
Miocene	Absent	Elevation, terracing and folding. Probably some volcanic activity and connection with Yucatan and Haiti but not Jamaica.
Pliocene?	White limestone	Doubtfully a subsidence of about 200 feet.
Pleistocene	Elevated coral reefs containing recent species	Subsidence of 80 to 100 feet, then about equal elevation; subsequent subsidence of 40 to 70 feet. There may have been minor oscillations.

Since I already have indicated the general division of the Island into limestone and metamorphic rock areas, and as in the discussion of many species further reference is made to the well-defined faunal differences to be seen in the resulting environments, it may be well to consider in more detail the different forms in which these major divisions present themselves.

The Limestone Ranges

As one stands at the Country Club in Marianao, a few miles west of Havana, he may see near the horizon to the westward a steep sharp eminence, perhaps five hundred feet high. This is the little Sierra de Anáfe, seen end-on. Now, although geologically speaking the narrow limestone ranges may be divided into several series, according to their age and altitude, still from the ecologic point of view they may well be grouped together. This little range, easily visited, yet little known, offers in miniature the conditions which one may find elsewhere on a vaster scale. The steep, sharp slopes are clothed with thick, thorny undergrowth and taller, ragged trees, sheltering Todies, Lizard Cuckoos and Black Finches. The rock, often exposed as bare, white cliffs, is everywhere near the surface. The summit in this case is a more or less flat plateau, cut by small streams into ravines, and into tiny *hoyos*, where in spite of wood-cutting a few Trogons may still be seen. These round *hoyos*, or sinks, with an area on the bottom of from a few feet to ten acres, and with sides, in some of the ranges, a thousand feet in depth, are a peculiar feature of Cuban mountains. Steep-sided and usually round, they often represent caves whose roofs have fallen in, allowing of fast solution and erosion. In other cases they may have some other sort of origin. In these *hoyos* the best tobacco in the whole wide world is grown, and if more certain proof of excellence is asked for, then why else would the *Hoyo Pelenque* have been cultivated for over a hundred years, when it is surrounded by cliffs which must be ascended or descended by more than seventy separate ladders, and when the oxen which plough the *hoyo* floor have to be carried in as calves and kept there their whole lives long. To be sure, the climber may listen to the Solitaire as he toils, no mean recompense for his labor.

The top of the plateau is dog-tooth, or *diente perro*, the apt Spanish name for the limestone as it stands eroded into fantastic little pinnacles and knife blades, which ring out like glass under foot and which constantly

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1 Hills of Limestone near Sumidero, Pinar del Rio Province

2 Foothills of limestone near San Carlos de Luis Lazo, Pinar del Rio Province

menace the corpulent explorer. The *diente perro* supports a surprising vegetation, considering its unpromising appearance, for it holds humus in its myriad shallow depressions and the roots of larger trees usually find little tunnels through which to extend. The seboruco formation on the aeolian limestone of the coast is likewise cut into *diente perro.*

The Sierra de Anáfe may be reached by trolley, and ascended from Caimito del Guayabal or Guanajay. The road passes through typical areas of rich cane land formed from the products of limestone erosion, with soil often stained a rich red or a deep black. Here cultivation is everywhere and the forest gone; a few ceibas are left with useful groves of royal palms and clumps of planted fruit trees, star apples, sops and mangos. The plains afford a rich and splendid panorama from the ridge.

West of Havana, a few hours by rail brings one to the Sierra de los Organos, or farther still after ten or twelve hours of leisurely travel one comes to railhead at Guane whence the Sierra de Guaniguanico can be reached by cart or horseback. Indeed now Ford motor cars ply from Pinar del Rio City to the valleys of Viñales and Luis Lazo, so that typical high limestone ranges can be easily reached by the aggressive visitor. On these higher ridges the slender *palma de la sierra* raises its feathery crown on a stem as slender and true as the fairest wine-glass. The green-barked, bottle-trunked *ceibon* sticks from the cliffs, with a shabby crop of branches and with the trunk always looking as if it were moulded in green soap. Up in these hills there is no high forest, but a vegetation as bizarre, as fantastic, and as wholly satisfying to one who seeks a novel scene, as far vaster altitudes in Mexico or Costa Rica often fail to give. In the Organ Mountains are the hot springs of San Diego, and here an ancient inn offers reasonable cleanliness and memorable food and drink. At all these places, in March and April, the Solitaire may usually be heard, and the resident Warblers, Vireos, Flycatchers and Icterids abound, with some of the rarer forms as well.

Eastward from Havana, within the Province, and southward toward Batabanó there are many little limestone hills, and near Matanzas the famous Pan, visible far at sea, is a prominent mark. In Santa Clara there is a great massif, not a range, of limestone hills rising to about three thousand feet in El Potrerillo near Trinidad, and extending to near Cumanayagua and Manicaragua. In the Province of Camaguey there are flat limestone plains, as in the other Provinces too, and only one small sierra, de Cubitas, north of the City. The easternmost Province is almost wholly hills, and these are mostly limestone, at least on the upper slopes.

The Savannas and Lomas

The railway to Pinar del Rio passes through great rolling plains or flat vales, with a poor variety of woody plants except along the cut-down river-beds, but with an abundant growth of bottle palms or *barrigonas*. Wire grass and bottle palms cover the flat savannas, and west of Pinar del Rio, where the schists are lifted up into high rounded hills, there are extensive open groves of pines. These reach westward through the Acostas hills and afford a last refuge to the rare little Pine Crows, and still support a good many Cranes as well. Bird life is sparse — the Pine Warblers, a few Woodpeckers, Meadowlarks and little else. East of Havana, however, for instance about Madruga, the savannas support a more varied flora. Many fan palms of several species are mixed with tall palmettos, while acacias and guava bushes, mostly escapes from cultivation, now occur far and wide. Over such savannas Palm Swifts may always be seen. Farther eastward, about Jobabo, the *saos* are thickly forested with tall spindly palmettos and some bush (*manigua*), for here in Oriente the greater rainfall makes even these sterile wastes somewhat more available for plant growth. In the highlands of Mayarí there are other high pine areas.

The Lowland Forest

The lowland forest in earlier times grew both on the flat limestone plains and on the red-and-black soil which is calcareous detritus stained with mineral salts or humus. Once widespread, now it is nearly all cut off. In a few places, as on the eastern shore of the Ensenada de Cochinos, the forest grows on the sparsely covered aeolian limestone rock of the coast, the *diente perro* appearing here and there on the forest floor. One wonders here how such sparse soil, howsoever rich, could have supported woods,

of which a few real forest giants remain and from which scattered sticks of rarest cabinet timber have been cut and hauled out for years. This removal of these trees does not greatly affect the character of the forest, for in the tropics trees grow in infinite variety, the various individuals of each species widely scattered and not in pure stands as with us. See the fine description in Walter Wilcox's 'Among the Mahogany Forests of Cuba' (Nat. Geogr. Mag., vol. 19, pp. 485–498, pls. and text figs., 1908). Unfortunately this type of forest on rock was not very widespread; for while areas here and there may show enough soil to make clearing for cane planting possible, still, in general, such areas are more likely to be kept to supply charcoal and railway ties after the big mahogany has been cut out. This at least is a slower process of destruction.

The other lowland forest grew on the rich soil washed from the carved and eroded limy rocks, out over the valleys and plains of the northern and southern coastal regions and of many central districts as well. This land is of fabulous fertility. The Trinidad Valley includes areas which have been under cane probably almost continuously for well over a hundred years. Near Guanajay I saw the beginnings of borings for oil. The top soil was nearly seventy feet deep, and earth from this level put into a seed-bed supported a growth just as luxuriant as soil taken from near the surface. The forest on such lands as these was largely cut in early Colonial days, and now not much remains, none on the deep heavy soil and but little where even a thin covering of earth overlies the *cascajo*, as the flat smooth limy deposits, just underground, are called. One must not, however, suppose that these great areas of cane are quite unbroken. The ceibas remain, and so do the groves, often of thousands, of royal palms. Deserted manor sites, and even spots where once stood some tiny peasant's hut, are marked by great umbrageous mango trees and other cultivated species useful for food or affording a welcome shade. Little *mogotes* or bits of seboruco, where the reef-rock, slightly uplifted and exposed, makes a few acres impossible to cultivate, afford scattered opportunities for wild plants to persist, and these features give variety to almost every view. And moreover, there are but few places where some one or more of the highland ranges may not be seen on the horizon, so that the scenery is rarely commonplace or wholly monotonous.

About the larger towns and cities, where there are many small dairy farms and truck gardens, the orchard growth may be almost continuous and may appear at first sight to be a natural forest somewhat cut over and cleared of undergrowth.

The Lakes and Swamps

Further on, in speaking of the Ruddy and Masked Ducks and the Glossy Ibis, I describe rather fully Lake Ariguanabo and the Zapata Swamp. The former is the largest lake in a country where subterranean drainage is so extensive that lakes are few and small. There are in western Cuba a good many little ponds, an acre or two in extent, and as these are usually not entirely permanent they show open water. The permanent lakes are wholly covered with water lettuce, water hyacinths and floating islands of willows and custard apples. The lake surface appears then as a green plain with scattered clumps of trees. A high wind, however, will move the islands about, and even crowd up and blow ashore enough of the floating plants to leave a large area of open water which may persist for weeks or longer before it is gradually reinvaded by the spreading plants. The lakes vary greatly in area, too, from the dry to the rainy season.

In the great Cienaga the superficial growth of vegetation over the oozy mass below is sometimes strong enough to bear a man, but the going is unsafe. Much of the surface of this swamp is composed of enormous floating areas of bulrushes or saw-grass, and these are quite impenetrable.

There is a swampy area just south of Cardenas, which in Gundlach's time supported a typical Cienaga flora and fauna, but which today has been greatly decreased by drainage. Although I believe that a few of the true Swamp Redwings were still to be observed there in 1917, since then I have heard that the swamp has been almost drained away.

To sum up then, the visitor who motors from Havana to either Pinar del Rio or Matanzas, may expect to see Grebes, Jaçanas and Gallinules in the small pasture ponds by the roadside. In orchards and farmyards Blackbirds, Grackles, Cuban Orioles, Centurus Woodpeckers, Ground Doves and perhaps a Blue Thrush, may reasonably be hoped for. Grassquits are common by the roadside, in thickets, and Anis, Cuban Meadowlarks and Cuban Mourning Doves in open pastures. Palm Swifts are seen flying overhead while passing wide savannas where Zenaida Doves, Cuban Mockingbirds and Quail should be watched for. Short walks to hillside jungles may reveal Lizard Cuckoos, Todies, a possible Trogon, the native Warblers and Vireos, Black Finches and Green Woodpeckers. However, as an examination of the notes on each species will show, many

of the birds are shy and restricted in distribution, and can be seen only by making special and well directed effort. Hosts of migrants may be observed everywhere. It will also be a comfort to many visitors to learn that there are no poisonous snakes in Cuba, although insect pests, especially the red-bugs and ticks, will probably surprise many pedestrians by their local abundance, and beyond doubt will discourage the majority after one good noonday walk in the thick scrub.

CLIMATE

Many books of a popular nature have been written for the Northern traveller, so but little need be said under this caption. It should be emphasized, however, that official temperatures taken under the protected conditions prescribed, give no idea of the heat which the explorer encounters. January, February and March are charming. The sky is clear, the sun hot, the shade cool, and the nights delightful. Every few weeks a norther freshens the air over the Island, and sometimes brings the temperature down to 55° or 60° F., which seems fearfully frigid. For windows are wide and glass is rare outside of Havana. From April to December the heat is very great, and while the oft-repeated remark is heard, that it is never as hot as in New York in summer, still this is only partly true. It seldom goes over 92° at noon, indoors, but it approaches this figure very closely every day, and at night there is no very marked change. In the open country and in the street really high temperatures may be found. This is mentioned simply in the interest of accuracy, not because the heat is unhealthful, or especially unpleasant to any one who loves the tropics. It is quite the reverse. The Spaniards built their cities too crowded, and their narrow streets, while easily shaded with awnings above, admit no draughts of air. Their houses, on the contrary, they built far and away better than English, French, or Dutch. The high stud, — rooms of thirty feet are not rare, — the thick walls, the large high windows and doors, make perfect tropical houses, and the wonder is that only recently have they been copied.

The Island as a whole is now extraordinarily healthful. Yellow fever is gone; hook-worm has but small hold; filariasis is much rarer than elsewhere in the West Indies; but malaria is ever a problem. In portions of

central Cuba and the lowlands of Oriente there are still many foci of severe malarial infection, often of the most pernicious aestivo-autumnal type. Therefore all the usual precautions should be observed, especially about plantations and farms recently cleared. Generally speaking, the savanna lands are free from malaria except where infected mosquitos may be blown in for short distances, probably rarely more than a mile or two at most.

In this paper I have assumed that the bird lover in Cuba will recognize readily the American migrants and those resident species which are identical, or nearly so, with North American species, such for instance as may be studied readily with Chapman's 'Handbook of the Birds of Eastern North America.' For the others, when possible, a few brief recognition marks are given, which should serve to identify the species in the field.

The Cuban names of birds given are those in common present use among the country people, who often are good observers. The English names are, so far as possible, those used by foreign residents, who rarely are good observers. I have made no attempt to coin vulgar names where none are in ordinary use, except in a few cases where such names are obvious.

It is impossible to thank all of my hospitable friends, both Cuban and American, for help and advice, but a few must surely be mentioned. First and foremost, Carlos de la Torre, Rector of the National University and an Honorary Doctor of Harvard, has been a warm friend for many years. The Dean of Latin-American zoölogists, erudite, patient and endowed with a memory beyond belief, his first-hand knowledge of every branch of Cuban zoölogy has always been put to my aid. Señor don Francisco Morales at the Cienaga, Dr. Charles T. Ramsden at Guantanamo, Mr. Shaler Williams at Guayabal, Mr. Walter Wilcox at the Ensenada de Cochinos and Mr. Edwin Atkins and his family at Soledad, have all been most hospitable. Professors A. Mestre and José Cadenas have frequently aided me, Dr. Victor Rodriguez has been often a most agreeable and helpful companion, and Mr. R. M. Grey of the Atkins-Harvard Botanical Station, as well as Mr. Hughes and many others at Soledad, have shown me many, many favors. Officials, officers of the Rural Guard and a host of others have often been generously useful, and all these have sincerest thanks.

My thanks are due and are given in full measure, pressed down and running over, to my friends Outram Bangs and Charles F. Batchelder.

The former has guided me through the intricate maze of transitory change in the ornithological nomenclature, fashionable for the moment; the other has labored to render my verbiage into human speech. Glover M. Allen and James Lee Peters also have often given me much advice and assistance.

I want also to express a hope and make an admission. If my friend C. T. Ramsden would only write up his lifelong experience with the birds of the savanna of Santiago and the Guantanamo basin, no more valuable record of Cuban bird life could ever be expected and I should be the first to confess myself presumptuous to have attempted this present piece of work except in so far as it applied to species which being western in their distribution have not come into Ramsden's ken. May he undertake it at once. I, myself, now feel the force of "fools rush in where angels fear to tread."

ANNOTATED LIST

OF THE

BIRDS OF CUBA

1. Colymbus dominicus dominicus Linné.

ANTILLEAN GREBE; SARAMAGULLÓN CHICO.

A Grebe similar in appearance to the Northern Pied-billed Grebe, but decidedly smaller.

Cuba, being largely a limestone country with underground drainage, has very few lakes and ponds. Places suitable for nesting Grebes are not often seen. This bird is decidedly uncommon, probably not more so today than formerly. I have seen it in small ponds generally in Pinar del Rio, and less often elsewhere.

2. Podilymbus podiceps (Linné).

PIED-BILLED GREBE; SARAMAGULLÓN.

Todd is beyond doubt correct in merging Bangs' race, *antillarum*, with the parent species.

The Pied-billed Grebe is a somewhat rare bird, but more often seen than the preceding. In Lake Ariguanabo and Lake Bacuranao there are always a few pairs, as well as in the lakes of the great Cienaga de Zapata. Elsewhere there are only scattered birds in the little ponds. The Grebes

do not seem to adapt themselves to the 'bonnet beds' and dense fields of water hyacinth and lettuce, the way the Masked and Ruddy Ducks have done. They apparently prefer open water. While I was at Lake Ariguanabo with Lord William Percy in January, 1920, we saw several downy young. Gundlach called attention to the fact that Grebes in Cuba nest at very various times.

3. Oceanites oceanicus (Kuhl).

WILSON'S PETREL; PAMPERO.

Gundlach saw some Petrels, which he fed in the wake of a schooner, with cut bits of dolphin (*Coryphaena*). He fails, however, to say how near the Cuban coast these birds really were. I never have seen any Petrels on my very many journeys about the coast or between Key West and Havana. So far I have looked in vain for the Black-capped Petrel, observed by several naturalists recently in waters not far from the Florida Strait.

4. Puffinus lherminieri lherminieri Lesson.

AUDUBON'S SHEARWATER; PAMPERO.

There is no evidence that Audubon's Shearwater breeds about the Cuban coast, as it does in the Bahamas. It is often seen off shore, and frequently has been found inland after hurricanes.

5. Phaethon lepturus catesbyi Brandt.

TROPIC BIRD; RABIJUNCO.

In 1913 I visited Cabo Cruz, and found the breeding colony of this species which Gundlach recorded, still in existence. It appears to be the only one in Cuba. In the spring of 1922, while sailing past the Farallones de Maisí, I observed a single pair flying toward the shore.

6. **Sula leucogastra leucogastra** (Boddaert).

Booby; Pajaro Bobo.

A few Boobies nested formerly, according to Gundlach, on Cayo Mono Grande. I have seen none about Cardenas recently. There is, however, a large nesting colony on Cayo Piedras, in the Ensenada de Cochinos, where Brooks and I secured several specimens on our visit to Caleta Rosario on the Ensenada.

7. **Sula sula sula** (Linnê).

White Booby; Pajaro Bobo.

I have but seldom seen White Boobies off the Cuban coast. Gundlach apparently saw them too often to cause much comment. He never secured specimens except once after a cyclone, when some were blown inland to Camarioca.

8. **Phalacrocorax auritus floridanus** (Audubon).

Florida Cormorant; Corua.

This is the Cormorant that sits on every buoy about the Cuban coast. It is the most characteristic water bird seen on coasting trips among the cays or from Batabanó to Nueva Gerona in the Isle of Pines. The nests are almost always in the mangroves, in colonies, and eggs have been found from June into September.

9. **Phalacrocorax vigua mexicanus** (Brandt).

FRESH-WATER CORMORANT; CORUA.

This Cormorant appears somewhat smaller than the Florida Cormorant, but the principal differences are evident only upon direct comparison.

It is much more uncommon than the other, and is more generally found in fresh-water lakes or in deep brackish estuaries, where, however, it is far from rare. In March, 1915, Mr. J. L. Peters shot a fine series in the Laguna de Centeno, near Nipe Bay. Gundlach killed but three isolated individuals during his many years of diligent collecting. It is very rare in the Isle of Pines. I have seen small flocks on the lower Rio Hanabana, so tame that they could be photographed from the shore.

10. **Anhinga anhinga** (Linné).

WATER-TURKEY; SNAKE-BIRD; MARBELLA.

The Snake-bird is much less common than might be expected. Perhaps the fact that for some strange reason their flesh is esteemed, has helped bring this about. Even as in Florida, they are not partial to mangroves, and they are seen in isolated pairs along the still waters of streams and rivers and more abundantly about the very few large lakes.

11. **Fregata magnificens** Mathews.

FRIGATE-BIRD; RABIHORCADO.

There are several Man-o-War bushes reported about Cuba. One is in the cays of the Doce Leguas Archipelago. I have seen Frigate-birds either roosting or nesting on a small cay off Cayo Romano, which, however, I did not visit. Ramsden speaks of several nests being found December 23, 1910, in a large mangrove tree at Puerto Escondido a few miles east of Guantanamo Bay (Auk, vol. 28, p. 254, 1911).

Frigate-birds are of course seen everywhere about the shores of the whole Island. Several individuals tamely visit Havana harbor almost daily. They are sometimes seen crossing the Island high in the air — fleeing bad weather, Gundlach thought. As a matter of fact, they undoubtedly can see both coasts from the great heights at which they often sail.

12. **Pelecanus erythrorhynchus** Gmelin.

White Pelican.

I often have seen the fine White Pelican in the Gundlach collection, preserved in the Institute of Secondary Education in Obispo Street, Havana. I know of no other record.

13. Pelecanus fuscus Linné.

Brown Pelican; Alcatraz.

Found generally about the cays of the Cuban coast and shores where there are sandy beaches. A few years ago Pelicans fished regularly in Havana harbor and off the Malecon; latterly they have been less regular visitants. They are most abundant off the north coasts of Matanzas, Santa Clara and Camaguey Provinces, probably because their principal breeding ground is Cayo Mono Grande, near Cardenas. They do not seem to be subject to much present persecution, and probably are decreasing little, if at all, in numbers.

14. **Ardea herodias repens** Bangs and Zappey.

Great Blue and Great White Heron; Garcilote or Garcilote Blanco.

There is, it must be admitted, still some uncertainty as to whether *Ardea herodias adoxa* Oberholser is simply the blue phase of Bangs' race,

or whether it is distinct. The probability, on purely biological grounds, is that the two names should be merged. Nevertheless, whether by chance or for some definite reason, the Great White Herons seem to outnumber the Great Blues about the coast cays, while the reverse condition is generally true of inland fresh waters.

Today the Great Blue Heron is decidedly more rare than during Gundlach's time. It is, however, still common in the Zapata Swamp, but very shy. White birds have been observed in the Swamp, and of course Great Blues are often seen along the coast where the shores are muddy and fringed with mangroves. The white birds are more abundant among the cays off the coast between Caibarién and Punta de Judas than almost anywhere else.

15. Egretta alba egretta (Gmelin).

American Egret; Garzón.

While a few Greater Egrets were seen in 1915 near the Estero de Juan Hernandez on the south coast of Camaguey, and also in the Cienaga on several recent visits, nevertheless the bird is tremendously reduced in numbers and plume-hunting is still carried on in retired localities. There is no sentiment against the use of plumage on millinery in Cuba, and plumes, not only from Cuba but from Central America and from northern South America, find a ready sale in Havana.

16. Egretta thula thula (Molina).

Snowy Egret; Garza Blanca.

This beautiful bird is now extremely rare. Mr. J. L. Peters collected one (M. C. Z., no. 67,190), at Nipe Bay in March, 1915. It is still occasionally to be seen about the cays of the coast, but is now almost never observed in the fresh-water swamps.

17. **Dichromanassa rufescens** (Gmelin).

Reddish Egret; Garza.

Not uncommon about the mangroves of the coast and adjacent archipelagos, nor is it greatly reduced from its former status. It was observed abundantly about the west-shore marls of the Ensenada de Cochinos in 1915. It is very variable in color.

18. **Hydranassa tricolor ruficollis** (Gosse).

Louisiana Egret; Garza.

This is still a very abundant species in all suitable localities.

19. **Florida caerulea** (Linné).

Little Blue Heron; Garza.

The most common of all the Cuban Herons. Abundant about all waterways, ponds and swamps, as well as about the muddy coast. Little Blue Herons are, as Gundlach first pointed out, sometimes to be seen in the fields in search of lizards and insects.

20. **Butorides virescens maculatus** (Boddaert).

Green Heron; Aguaita Caimán.

Oberholser's work (Proc. U. S. Nat. Mus., vol. 42, pp. 529–577, 1912) on the West Indian Green Herons, in which they are separated into no less than eight ill-defined forms, surely has served no useful purpose. Todd (Birds of the Isle of Pines, pp. 182–185) has offered some comments

upon this work, and has also made reference to the Swan Island 'race.' The most reasonable plan is to consider that West Indian birds together may be recognized as a race, for which, as Riley first proposed (Smiths. Misc. Coll., vol. 47, p. 278, 1904), the name *maculatus* of Boddaert, is available. Should the Cuban bird be separable, which it almost certainly is not, then Lembeye's name *brunnescens* is applicable to the subspecies. For this is not a separate valid species, in spite of the arguments advanced by Todd. Its habits, notes, etc., are not dissimilar from the common Green Heron's, and on February 27, 1915, J. L. Peters killed what he felt sure was a mated pair and found the two types of coloration typically represented. The '*brunnescens*' phase is also shown by a fine adult (M. C. Z., no. 72,982) from the Madeira Hammock, Florida, in the Howe-Shattuck collection, while a young bird from Quintana Roo, Mexico, (M. C. Z., no. 60,679) is almost similarly typical of this handsome aberration. Thus it is evident that it may appear sporadically outside of Cuba. In Cuba it is similarly sporadic in occurrence, but less uncommon. Ramsden has listed the records (Auk, vol. 28, p. 367, 1911). It is wholly probable that if by chance two individuals of the '*brunnescens*' type should mate, the young might all exhibit this type of coloration, while possibly it acts as a Mendelian recessive in mixed matings.

In Cuba Green Herons are found under the same sort of conditions as with us here in New England, but some birds during drought — and perhaps occasional individuals at all times — visit upland pastures where they hunt lizards and large insects.

21. Nycticorax nycticorax naevius (Boddaert).

BLACK-CROWNED NIGHT HERON; GUANAB[A].

I never have found the Black-crowned Night Heron a common bird, although I have seen a few individuals on each of four visits to the Zapata Swamp. It is much less abundant than the following form.

22. Nyctanassa violacea jamaicensis (Gmelin).

WEST INDIAN YELLOW-CROWNED NIGHT HERON; GUANABA.

This Night Heron is widespread and abundant. Both it and the preceding species are very much more shy in Cuba than in Florida, and

it is not unlikely that the fact that the Cuban *guajiros* (peasants) consider them excellent eating may account for this. Nevertheless, for some reason or other, the birds are shy in the safest and most unfrequented localities.

23. **Ixobrychus exilis exilis** (Gmelin).

LEAST BITTERN.

While hunting Rails in the Cienaga de Zapata and about Lake Ariguanabo I often have flushed Least Bitterns, which appear to be not uncommon in suitable situations. They are known to breed in Cuba, and there is a question as to whether all the birds observed are not really residents, although no distinctive characters have ever been found.

24. **Botaurus lentiginosus** (Montagu).

BITTERN; GUANABÁ.

During the winter months Bitterns are often flushed from reed beds and saw-grass. They retire northward in late April. By the people they are confused with the two species of Night Heron.

25. **Ajaia ajaja** (Linné).

SPOONBILL; SEVILLA.

Now a very rare bird. I know of no rookery in Cuban territory. Single birds occasionally are seen in company with White Ibises and the smaller Herons along the less frequented coast regions, where there are mud-flats. There are thus a few about San Juan de los Perros and Punta de Judas, about Cayo Romano, Cayo Coco and the *esteros* of the south coast. I observed a few small bands among the marly salt-ponds and mangrove sloughs of the wild and low-lying western shore of Cochinos Bay, the least-visited corner of the entire Republic. There are still a few about Nipe Bay.

The Spoonbills are very shy and much reduced in numbers as compared with Gundlach's time, and as they cannot hope for sympathetic protection, or for enforced protection even if laws are passed, they are surely doomed.

26. Eudocimus albus (Linné).

White Ibis; Coco Blanco.

White Ibises were reported by Gundlach to exist in incredible bands in many parts of the country. Now they are much reduced, although in no immediate danger of extinction. I have seen bands of no mean size along the wild northern coast of Pinar del Rio, about Palo Alto and elsewhere along the south coast of Camaguey, in the Zapata Swamp and among the cays of the north coast. They are, however, much rarer in Cuba than in Florida, and many days will pass while one is constantly moving about suitable localities when only an occasional singleton will be seen. Its flesh is considered very delicate, which it really is.

27. Plegadis falcinellus falcinellus (Linné).

Glossy Ibis; Coco Prieto.

For several years I made annual trips to a plantation called San Francisco, near Sarabanda, Gundlach's old headquarters for exploring the Zapata Swamp. The proprietor, don Francisco Morales, offered me most courteous hospitality, and daily his horses carried me down along the course of the Rio Hanabana to where this river flowed out into the great Swamp. The morass itself is bordered by a wide area of open country with scattered clumps of palms and hardwood 'cayos,' the word here being equivalent to the Floridian hammock. This border zone slopes gently toward the Swamp and is wider or narrower as the rains cause the whole Cienaga to rise or lower. The inner marshes of the Cienaga in general consist of an enormous deposit of silt, held partially in suspension and

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THREE STAGES IN TURNING VIRGIN FOREST INTO CANE FIELDS, CIENAGA DE ZAPATA

resting on a firm, shallow, limestone basin or substratum. Among them are a few open lakes, but generally the ooze supports a sort of half-floating vegetation of grass and reeds, with clumps of willows, and many of the pools are so choked with aquatic vegetation that they show no open water at all. This enormous territory offers tempting soil and is in imminent danger of being completely drained. It has been reduced in size already by drainage. When cane is planted in the Cienaga, the last chapter will be written in the Cuban history of the Glossy Ibis and other splendid birds. Day after day I rested late in the afternoon under some trees which allowed uninterrupted vision far out over the open marsh, and watched for the bands of Ibises which fed regularly along the drier shores, where in fact cattle also wandered to eat the succulent hyacinths stranded along the marge. Nor man nor beast dared venture far out on the *tembladera*, for this skim of vegetation rippled and sagged, and to break through spelt oblivion. The Ibises came regularly from the southwestern horizon in wavering lines, perhaps three or four hundred in all. They alit upon the *tembladera* and began to work shoreward. Their method of progression was always the same — the birds behind hopping up, flapping a half dozen *aletazos* (wing-beats), and then alighting just in front of the foremost of the walking band. This was constantly repeated as the birds ran along, probing the deep vegetation for snails and insects. They were really shy, and it was only after uncomfortable hiding and interminable waiting that a few specimens were secured. Usually the bands would jump into the air as one bird, and wheel about, when their line of progress in feeding brought them dangerously near a clump of trees.

I believe this is the only band, or at least part of the only colony, in Cuba. Gundlach only once saw a flock, also in the Cienaga, and saw a young bird in a lake near Cardenas and once got one from the Havana market. It has been recorded also only once from the Province of Oriente (Ramsden, Auk, vol. 30, p. 368, 1913.)

I have not been to San Francisco de Morales since 1915, and that year clearing the forest about the edge of the open country had begun (see Plate III). This forest, then the home of bands of Parrots and one of the last resorts of the rarer Ground Pigeons, is probably now wholly felled. The *Plegades*, however, probably nest in some small 'cayo' far out in the Cienaga, out of sight of land, so to speak; and until the Swamp is drained they probably are safe from extermination. In fact their band probably will survive longer than the tiny remnant of the birds which formerly were seen in Florida. When I was a boy, bands of Glossy Ibis passed daily up and down over Lake Washington and along the upper St. John's River. Today the bird has wholly disappeared from this entire territory.

28. Mycteria americana Linné.

Wood Ibis; Cayama.

Gundlach has recorded the Wood Ibis from about Cardenas and from the Cienaga, where he writes that it lives in the extremest inner 'cayos' and visits the edge of the Swamp only with the coming of the rains. I have seen a few individuals about the lake called Punta Gorda near the mouth of the Rio Hanabana, and a few about the lakes in the saw-grass east from Caleta Rosario on the eastern shore of Cochinos Bay. They are very shy, and they will not be reduced in numbers until the Swamp is drained, — or until the natives learn really to aim a rifle.

29. Phoenicopterus ruber Linné.

Flamingo; Flamenco.

There are still several colonies of Flamingoes about the Cuban coast. There are a few in Nipe Bay, a larger number about the shores of Cayo Romano, Cayo Coco and the Isle of Turiguanó. There are colonies scattered along the south coast from the Zapata Peninsula to the mouth of the Rio Cauto, but they are extinct, I believe, in the Isle of Pines. Everywhere they are occasionally killed for food.

30. Mergus serrator Linné.

Red-breasted Merganser.

Gundlach records a single specimen, bought in the Havana market. It is now mounted in the Gundlach collection in the Havana Institute.

31. **Lophodytes cucullatus** (Linné).

PHEASANT DUCK; HOODED MERGANSER.

A rare winter resident. It appears occasionally in the markets of the larger cities, especially Havana and Matanzas. I have seen it once on the lower Rio Hanabana in 1915.

32. **Anas boschas boschas** Linné.

MALLARD; PATO INGLÉS.

We know of the Mallard in the literature only from Gundlach's record of a flock which appeared near Cardenas in 1850. The professional duck hunters of Mariél and Lake Ariguanabo, however, all know the species as the *Pato Inglés*, and it probably appears sporadically from time to time.

33. **Anas carolinensis** Gmelin.

GREEN-WINGED TEAL; PATO DE LA FLORIDA.

A few are killed in the autumn as they pass Cuba on migration.

34. **Anas strepera** Linné.

GADWALL.

Gundlach once received a single specimen, sent to the Havana market for sale and purchased for him by a friend.

35. Anas americana Gmelin.

Widgeon; Pato Lebanco.

The Widgeon arrives in Cuba regularly every winter, and I have seen small bands on various occasions on Lake Ariguanabo and Lake Punta Gorda in the Cienaga. It often is shot in the estuaries about Mariél, Bahia Honda and Cabañas, west of Havana.

36. Anas discors Linné.

Blue-winged Teal; Pato de la Florida.

The most abundant migrant Duck. It arrives in Cuba in early September and appears there often in great hosts, coming at evening to the fresh-water ponds. The day probably is spent about the inaccessible mangrove swamps of the coast. None are known to stay and nest.

37. Anas cyanoptera Vieillot.

Cinnamon Teal.

Recorded once from Cuba by V. J. Rodriguez, when in January, 1917, a single bird was shot at Lake Ariguanabo and sent to Havana for sale. The mounted specimen is now preserved in the Poey Museum of the National University, Havana (Mem. Soc. Cubana Hist. Nat., 'Felipe Poey,' vol. 11, p. 223, 1917).

38. Spatula clypeata (Linné).

Spoonbill Duck; Cuchareta.

A few Spoonbill Ducks arrive in Cuba every autumn, and retire northward in April. They usually are associated with bands of Blue-

winged Teal, and they have the same habit of appearing in the lakes at dusk and of taking refuge either at sea or in the mangrove swamps of the coast during the day.

39. Dafila acuta tzitzihoa (Vieillot).

PINTAIL; PESCUEZILARGO.

A fair few appear every winter, not in large flocks but, as Gundlach says, "in families." Their habits are similar to those of the Spoonbill Duck in many respects, but they often spend more of their time in the mangrove lagoons.

40. Paecilonitta bahamensis bahamensis (Linné).

BAHAMA PINTAIL.

Gundlach once killed a male in a lake near Sagua la Grande. It would not be surprising if further exploration showed that the Bahama Duck appeared from time to time along the little-known north coast of the Oriental Province.

41. Aix sponsa (Linné).

WOOD DUCK; HUYUYU.

The Wood Duck is resident in Cuba, but no differences can be detected in Cuban specimens; they appear absolutely typical. It is equally abundant in summer and winter, and few, if any, migrants arrive. The Ducks nest in broken palm trunks, either standing or fallen, and in other stumps or hollow trees as well. Although in general they are partial to shady streams and narrow, sluggish rivers, we shot several specimens when I was collecting at Lake Ariguanabo with Lord William Percy in 1920. The Wood Duck is so esteemed for its excellent flesh that it is in real danger of extermination, and today it is very far from being a common bird, less abundant even than ten years ago.

42. Nyroca valisineria (Wilson).

CANVAS-BACK.

Gundlach reports that in 1842 and 1850, a few Canvas-backs appeared in Lake Ariguanabo. I never have seen one in Cuba.

43. Nyroca affinis (Eyton).

LITTLE BLUEBILL; CABEZÓN.

A winter visitor to the larger, open lakes. On almost every visit to Lake Ariguanabo I have seen large flocks cutting about at sundown

44. Nyroca collaris (Donovan).

RING-NECKED DUCK.

The Ring-necked Duck appears almost every year in numbers about equal to those of the Little Bluebill, according to Gundlach. As a matter of fact, I believe that the species are often confused by the local gunners and that this one is very decidedly the rarer of the two. It certainly appears nowadays much less often in the Havana market, which I often have visited daily to examine the 'game' exposed for sale.

45. Charitonetta albeola (Linné).

BUFFLEHEAD.

A rare accidental visitor. Gundlach once got one in the Havana market.

46. Erismatura jamaicensis (Gmelin).

RUDDY; PATO ESPINOSO.

The Ruddy Duck breeds regularly in Lake Ariguanabo, and, so far as I know, at this station only. It is, however, far from improbable that there are other small colonies breeding in the lakes of the Cienaga, such as the Laguna del Tesoro. The Ruddies and Masked Ducks act very peculiarly in Cuba, and have adopted customs which are admirably protective in this peculiar environment. They ordinarily swim about, entirely submerged or with only the beak out of water. When they rest on the surface it is almost always among the *melanguetas*, the great upstanding lotus-like bonnet leaves, which afford effective shelter. They never — or almost never — fly, and are very rarely seen resting or swimming in open water, for there *are* little open areas in this great garden of floating plants which mask the fact that this is really a lake, — large and deep, — in spite of the little water that is visible. The pot-hunting *guajiros* who live about the lake have an uncanny skill in shooting the birds. They push about in tiny pirogues with a long bamboo pole, as silently and as fast as possible. They thus surprise the Ducks resting among the bonnets, and the birds of course dive and swim away. The only visible sign is a slight agitation of the bonnet leaves — almost imperceptible except to the well-trained eye. The hunter shoots just ahead of this motion, and usually gets the Duck. There are many turtles in Ariguanabo; they shake the bonnet stalks just a bit more vigorously than do the Ducks — and I suppose that turtles are occasionally shot at.

47. Nomonyx dominicus (Linné).

MASKED DUCK; PATO AGOSTERO.

What I have said about the Ruddy Duck applies equally to the Masked Duck. The name, Agostero, is derived from the reputed nesting in August and its becoming apparently more abundant at that time. It is rather less common in the big lake than the preceding species, but it occurs throughout the Island. Scattered pairs or very small colonies may be found in any pond large enough to support beds of saw-grass, bulrushes

and aquatic plants, in which the birds may hide. During the dry season at Lake Bacuranao, not far east of Havana, they are hunted with dogs which are taught to catch the birds, loath to leave their haunts even when low water strands the floating vegetation which gives such excellent refuge when well afloat.

I remember one afternoon in April, 1915, the train bound for Guane stopped for repairs not far from Consolación del Sur, and the long delay allowed me adequate opportunity to watch a pair of *Agosteros* swimming about in a tiny pond in a nearby pasture, which was certainly less than an acre in extent. Never before or since have I seen Masked Ducks so confiding, and since that time I never passed that little pond on many journeys to and fro without hope of a repetition of this unique opportunity, but so far no second chance has been vouchsafed. I have seen Masked Ducks very occasionally in the ponds in the Cienaga, but all of the large series which we have in the Museum of Comparative Zoölogy was got from the two lakes Ariguanabo and Bacuranao. It is very unfortunate that it is about these two localities that the mongoose now fairly swarms. Introduced from Jamaica to Havana many years ago, it never has spread through Cuba with that rapidity which was so noteworthy elsewhere in the Antilles. The mongoose is no swimmer, but it creeps about the floating islands of willows and plays havoc with many Ducks' nests.

Masked Ducks when sent to market are highly prized, but of course only a few find their way to the stalls of the game-sellers each year. The closed season on game, in Havana and Matanzas Provinces especially, is well enforced, the Rural Guards being entirely efficient in these populous portions of the Island.

During our visit to the Lake in 1920 Lord William Percy, my companion, made extensive notes, covering about all the local information obtainable, from which he has kindly extracted the following:

"According to local information, the Masked Ducks are much less secretive in late summer and autumn when the Lake is higher and provides less cover from view; in such conditions we were told that the Masked Ducks flew a good deal of their own accord, especially early and late in the day, and experience elsewhere with these birds did not suggest that they were difficult to flush, though they rarely flew farther than the nearest patch of cover. On the other hand local hunters agreed that, while the Masked Ducks took to wing quite frequently, the Ruddy Ducks never did so under any circumstances. This, if true, is remarkable, but it is possible that the Cuban race, being entirely stationary, may have developed a more skulking habit than that of the migratory race in Canada and the United States. (It certainly is a fact that the Erismaturas of the high Andean lakes are so unwilling to fly as to give an impression of incapacity

to do so, for during several consecutive months of constant association with them I never saw one on the wing, though efforts were frequently made to induce them to fly.)

"In Cuba the Ruddy Ducks were in full, new breeding dress on the thirtieth of January, 1921, and were actually breeding on that date, whereas the male Masked Ducks were in full moult and young birds were obtained which appeared to be from four to five months old. We were told that this bird bred in August and was locally known as 'Agostero' for that reason.

"The call of the male Masked Duck is very distinctive, '*kirri-kirroo, kirri kirroo, kirroo, kirroo, kirroo,*' and the bird has a curious habit of responding like a cock Pheasant to such noises as the banging of a punt-pole on the water or an explosion in the distance. The female makes a short hissing noise, repeated several times.

"No first-hand information was collected with regard to these birds' nesting habits, but a local hunter pointed out several nests which he said were those of Masked Ducks. According to him, the nests were always placed amongst short, round rushes, and contained from five to six eggs but never any down at all."

48. Dendrocygna arborea (Linné).

Tree Duck; Yaguasa.

Tree Ducks may be told by their rather long legs and neck and somewhat goose-like appearance.

Gathering the eggs of the Yaguasa is regularly practised in Cuba. The Tree Ducks nest, off and on, all summer, and build in many situations. The nest often is placed in a bunch of bromelias or airplants, *curujeyes* they are called in Cuba, or on a big limb covered with Spanish moss or in hollow stumps. The eggs sell for twenty cents each, and fanciers far and wide over the Island hatch them under domestic poultry and raise the Ducks for pets. In yard or *patio* they serve a useful purpose, for they break up fights among the domestic fowls and whistle at the approach of strangers.

The cutting of the lowland forest has already very greatly reduced the number of Tree Ducks, and they are today gone from many localities where but a few years ago they were very abundant. There is only one

small band left at Ariguanabo. They pass the day in the great *maciales*, or bulrush beds, and fly forth at night to feed on the *palmichi*, the racemose fruit of the royal palms. About the Cienaga, and in retired situations of the less densely populated coastal regions, they still are abundant, retreating to the inner fastnesses of some swamp by day but at night sallying out to visit the palm groves in the cultivated plantations. The characteristic monosyllabic whistle is very agreeable and is mimicked by the native hunters to decoy the birds. The flesh is excellent, it is one of the most delicious of all game birds. However, it is one of the birds to which the market certainly should be closed, although of late years but very few are received.

49. Dendrocygna viduata (Linné).

Black-masked Tree Duck.

A very rare accidental visitor. Gundlach recorded four secured in the market at Santiago de Cuba, but gave no date. He also believed that once one was killed in the Zapata Swamp.

50. Chen hyperboreus nivalis (Forster).

Greater Snow Goose; Guanána.

Formerly an abundant winter visitor, arriving in October and staying until spring in the Zapata Swamp. Gundlach notes that the newly arrived birds are usually not very shy, and that year after year they pass to and fro over the same route from roost to feeding ground. A famous local hunter at Aguada de Pasajeros, Francisco Llorente by name, has told me, on many occasions on different visits, that Geese were fast growing very rare. During very many visits I have seen only three or four small family bands in flight over the Swamp.

51. Chen caerulescens (Linné).

Blue Goose; Guanána Prieta.

I never have seen a Blue Goose in Cuba, but Gundlach records that a very few occasionally arrive in the autumn and return north in April. He observed a good many with the glasses, but killed, himself, only the one immature specimen now in the Institute in Havana.

52. Anser albifrons gambeli Hartlaub.

White-fronted Goose.

A rare but regular winter visitor to the Zapata Swamp. In Gundlach's time a few were received at the Havana market from other places. I have seen only one family, in March, 1916, near the mouth of the Rio Hanabana.

53. Cathartes aura aura (Linné).

Turkey Buzzard; Aura or Aura Tiñosa.

The Turkey Buzzard occurs throughout the Island in countless numbers. It is so abundant, so tame and so well known, that it seems entirely unnecessary to dilate upon its habits.

[**Coragyps urubu urubu** (Vieillot). Black Vulture. C. B. Cory recorded (Auk, vol. 8, p. 294, 1891) the Black Vulture as one of a list of species seen during a trip to Cuba in March and April of 1891. Gundlach never observed one, so far as his published notes show, nor have I ever seen or heard of one. Since Cory made no special mention of the species, he, beyond doubt, had no idea of the improbability of his record, and it may well be disregarded.]

54. Polyborus cheriway auduboni Cassin.

Audubon's Caracara; Mexican Buzzard; Caraira.

The Caraira is probably as abundant now as it ever was. Living in scattered pairs, and preferring open grazing lands to forest, it has a greater range than formerly. The sugar plantations perforce maintain large cattle ranches, as all cane still is hauled from the field to mill or railway by bulls. Thousands of head of cattle are raised for the Havana market, as well.

The Cubans call the Caracara the King of the Buzzards (*Rey de las Auras*), because when a beast dies it is first to arrive and usually feeds alone. As a matter of fact its powerful beak and an undoubted preference for fresh meat, account adequately for this habit. The Buzzard is not powerful, and prefers, and can tear up easily, only meat which is softened by decay.

I have several times seen Carairas chase large birds. Gundlach once saw one chase, tire out and kill a White Ibis. In dry weather they frequent pools, and feed voraciously upon the dead and dying fish.

The flight is crow-like, direct, fast and with heavy noisy flappings. Gundlach notes that when frightened or irritated it gives a high-pitched shriek, but I believe that observation was made from Gundlach's famous pet which he raised from the nest and kept for fifteen years. The Caracara habitually rests perching, usually in the very top of a high tree or on some steep hillock. Often in the morning, or before sundown, it throws back its head until it almost touches its shoulders and gives its high, cackling cry which gave rise to the Brazilian name of Caracara, the Cuban Caraira, and the less apt Argentine name of Carancho.

The nest, which I have seen but once, near Palo Alto, was among parasitic plants in a high tree. Gundlach says this is the usual site, but that palms sometimes are chosen. As with so many Cuban birds, the nesting season varies, and eggs have been found in November, December and March.

My specimens from Cuba and the Isle of Pines differ in no wise from mainland examples collected from Florida to Panama.

55. Circus cyaneus hudsonius (Linné).

Marsh Hawk.

A common and widespread winter resident, the great majority seen always being young birds. It never has been known to nest.

56. **Accipiter gundlachii** Lawrence.

One of the rarest Hawks in the world. In Gundlach's time, he said, "Not rare in the woods but uncommon about cleared lands." He added that adults in full plumage were rarely seen, and that he had but once found the nest, in the Zapata Swamp, with young ready to fly. It is reported very harmful to poultry and of the swiftest flight. I know of no specimens having been collected for many years. Ramsden, a lifelong collector in the Guantanamo basin, had, in 1915, in his collection only one old, inherited, mounted bird. I have seen Hawks on one or two occasions which I felt might be this species — several times near Cojimar — but I never have been near enough to chance a shot or to make a positive identification.

This was a Hawk of the lowland forest, and it probably is well advanced on the road to complete extinction.

57. **Accipiter fringilloides** Vigors.

This little Hawk is less rare than the preceding, and it has been taken within a few years upon Pico Turquino, near Yara, by R. H. Beck, during the Brewster-Sanford Expedition, while in search for nesting Petrels upon that mountain. I never have killed it, although I have seen it flying several times. The type was taken by MacLeay who lived near Guanabacoa. (For an account of his life in Cuba, see Mario Sanchez, Mem. Soc. Cubana Hist. Nat., 'Felipe Poey,' vol. 2, p. 73, 1916.) Gundlach mentions killing a number of specimens, and among other localities he speaks of San Diego de los Baños and Bayamo, both very familiar to me from various visits which, however, have never provided the opportunity to garner one of these much desired treasures.

58. **Accipiter velox** (Wilson).

Sharp-shinned Hawk.

Gundlach once killed two young Sharp-shinned Hawks at a coffee plantation in the Sierra de Yateras. He believed they had been hatched near by. He speaks of adults as being rare, but gives a description of

adult as well as juvenal plumage based on specimens. I have seen nothing of this bird on the Island. There is a chance that this is a case of mistaken identity, and that the very closely allied *Accipiter fringilloides* was the species that Gundlach really had.

59. Buteo borealis umbrinus Bangs.

Florida Red-tailed Hawk; Gavilan del Monte.

One of my first sights of Red-tailed Hawks was when in the Lomas de los Acostas, far in western Cuba, the peasant women called from ridge to ridge in the high open savanna hills the news that the *Gavilanes del Monte* were about. Other women then far and wide would come out from their tiny highland huts and call to their fowls the well-known warning. Red-tailed Hawks may be seen flying high in the air over any of the wilder parts of the Island, but they are especially common about the high lomas, the dry, sparsely grown granitic hills of Pinar del Rio. Here they have better chance to observe their prey than about the forested sierras.

Birds from Cuba belong to the subspecies which is characteristic of Florida, and are indistinguishable from this form.

60. Buteo platypterus platypterus (Vieillot).

Broad-winged Hawk.

The Cuban Broad-winged Hawk is, according to Kirke Swann, not to be distinguished from mainland birds. On this account Burns's subspecific name of *cubanensis* may be considered as invalid.

This Hawk is far less rare than the Red-tailed, and more widely distributed. It is, however, disappearing with deforestation and is certain soon to be very rare. It is characteristic of the edges of the forests, and of quiet wood lanes, and is rarely seen near houses or plantations. It feeds usually on small birds, according to Gundlach, but Ramsden has recorded it catching minnows which were massed together in shallow pools after long drought (Auk, vol. 28, p. 485, 1911).

61. **Urubitinga gundlachi** (Cabanis).

CUBAN CRAB HAWK; BATISTA.

The Crab Hawks appear in the distance like very large Everglade Kites. In the field their color and method of flight are surprisingly alike — except that when flying high and wheeling these Hawks scale with motionless wings like the large Buteos.

The Batista is one of the finest of Cuban birds. It flies impressively high in air, circling and whistling constantly its musical three-note call which has given rise to the native onomatopoeic name. The Crab Hawks are nowhere abundant, a pair here and another pair way yonder, in regions where there are heavy and extensive mangrove forests which shelter the great white crabs on which the Batistas feed. The Ensenada de Cochinos, the cays off the north coast of Camaguey and the west coast of the Isle of Pines, are the regions where Crab Hawks may most easily be observed. If there are any about, the crabs, all opened in characteristic fashion, will be found in the mangrove swamps. The Hawk pounces on the crab, gathers the legs and claws of each side in one of its feet, and reaching down removes the carapace by hooking the bill under its front edge. While hunting at dawn and early eve the birds fly low and are not shy at all, but at midday they circle hour after hour far in the blue. It is then that their whistling call can be heard for many miles. Gundlach has described the nest and eggs, and so also has Bangs (Auk, vol. 22, p. 307, 1905).

62. **Chondrohierax wilsoni** Cassin.

GAVILAN CAGUARERO.

This Snail Kite is confined to that part of the Oriental region which supports the beautiful arboreal *Helix picta*, or *caguayo*, on which it feeds. I have seen its feeding places but once, and I owe the specimens now before me to my friend Charles T. Ramsden, who kindly collected them for me. His competent activity about extreme eastern Cuba has for years constrained me to explore other regions where no such vigorous local enthusiast was wont to work. Thus I have been brought in but little contact with this bird. Ramsden says it is very local, but — its haunts once found — it is easily secured on account of its stupid and confiding habits.

63. Rostrhamus sociabilis plumbeus Ridgway.

EVERGLADE KITE; CARACOLERO OR GAVILAN CARACOLERO.

The Everglade Kite is common in the Cienaga where Ampullarias abound. It also is usually to be seen about Lake Ariguanabo, and was reported by Gundlach from ponds in the Cauto Valley. My old companion, Fermin Cervera, a former Spanish soldier now resident in Cuba, wrote me that on May 12, 1915, he shot four "snail hawks," and on the same day found two nests, each containing their eggs. Those of one nest were almost ready to hatch, those of the other recently laid. Both nests were in a willow (Clavellina) tree in the middle of Lake Ariguanabo and were about a yard and a half above the water-level. The nests were well made of twigs and grasses. The eggs are now in the Museum of Comparative Zoölogy, and are the first recorded for this bird from Cuba, for Gundlach never found it breeding. It comes and goes in a most inexplicable manner, and often on visits to Ariguanabo I have not seen a bird.

Its flight is singularly like a Marsh Hawk's, only more flapping and labored. As is well known, its sole food consists of Ampullarias, snails which from dusk to dawn often swim with the foot expanded, hanging from the surface film of the water. The bird feeds at morn and eve, and has its regular stations where the snails are skilfully shucked unbroken, and where the heaps of shells accumulate and last many years. The Kites inevitably are growing rarer in Cuba, as in Florida, for draining goes on apace.

64. Elanoides forficatus forficatus (Linné).

SWALLOW-TAILED KITE.

A very irregular visitor which I never have seen in Cuba. The following records are given by Gundlach. "Many years ago" several seen flying over a lake near Cardenas; "later" a skin made by a friend who shot one from a flock of about fifty seen near Bahia Honda; "observed" at Cienaga de Zapata. He then adds three more definite dates: In 1856, when a band appeared near the outskirts of Havana; five years later (1861), when one was killed near Havana; again in five years (1866), when another was killed east of Guanabacoa.

65. Falco peregrinus anatum Bonaparte.

Duck Hawk; Halcon.[1]

Recorded by Gundlach as an annual winter visitor from the United States. He writes that it tarries about the shores of lakes and swamps, ready to dash forth after Ducks, Coot or Gallinules. He also makes special mention of its change of speed in flight.

I never have seen a single Duck Hawk in Cuba, and I conclude that now it must be very rare.

66. Falco columbarius columbarius Linné.

Pigeon Hawk; Halconcito.[1]

The Pigeon Hawk is rare in Cuba and Gundlach doubted whether this typically migrant bird ever remained to breed, although Gosse had observed the nest in Jamaica — doubtless a very exceptional case. What then was my surprise on April 27, 1915, when my friend Cervera brought me a pair shot while nest-building in the Botanical Gardens just outside the city of Havana. These birds are now in the Museum of Comparative Zoölogy (nos. 67,408 and 67,409). They differ in no wise from other Pigeon Hawks.

67. Falco sparverioides Vigors.

Cuban Sparrow Hawk; Cernicalo.

The Cernicalo is very common everywhere. The light and rufous phases of plumage have caused much confusion. They, however, signify but little. I have a large series before me and it may be of interest to list the birds.

[1] These two names are used only by bird students; the *guajiros* call most Hawks Gavilan.

M.C.Z. 46,649, Remedios, Santa Clara, H. Bryant, 1864, extremely rufous.
M.C.Z. 73,132, Monte Verde, Oriente, C. Wright, 1861, extremely rufous, coloration asymmetrical.
M.C.Z. 114,894, Holguin, Oriente, O. Tollin, 1904, extreme rufous phase.
M.C.Z. 113,386, Santa Fé, Isle of Pines, W. R. Zappey, 1904.
M.C.Z. 14,895, Holguin, Oriente, O. Tollin, 1904.
M.C.Z. 46,652, Remedios, Santa Clara, H. Bryant, 1864.
M.C.Z. 46,650, Cuba, H. Bryant, 1864.
M.C.Z. 43,146, Remedios, Santa Clara, H. Bryant, 1864.
M.C.Z. 46,651, Remedios, Santa Clara, H. Bryant, 1864.
M.C.Z. 67,229, Guaro, Oriente, J. L. Peters, 1915.
M.C.Z. 65,532, Banes, Oriente, W. C. Forbes, 1914.

The above eleven birds are typical of the rufous type.

M.C.Z. 46,654, Remedios, Oriente, H. Bryant, 1864.
M.C.Z. 46,656, Cuba, H. Bryant, 1864.
M.C.Z. 113,384, San Juan, Isle of Pines, W. R. Zappey, 1904.
M.C.Z. 113,381, Laguna Grande, Isle of Pines, W. R. Zappey, 1904.
M.C.Z. 113,380, Jucaro, Isle of Pines, W. R. Zappey, 1904.

These five birds may be termed intermediates.

M.C.Z. 113,385, Santa Fé, Isle of Pines, W. R. Zappey, 1904.
M.C.Z. 113,383, San Juan, Isle of Pines, W. R. Zappey, 1904.
M.C.Z. 113,382, Los Almacigos, Isle of Pines, W. R. Zappey, 1904.
M.C.Z. 43,145, Remedios, Santa Clara, H. Bryant, 1864.
M.C.Z. 61,077, Aguada de Pasajeros, Santa Clara, T. Barbour and L. A. Shaw, 1913.
M.C.Z. 67,223, Preston, Oriente, J. L. Peters, 1915.
M.C.Z. 67,224, Preston, Oriente, J. L. Peters, 1915.
M.C.Z. 67,225, Preston, Oriente, J. L. Peters, 1915.
M.C.Z. 67,226, Preston, Oriente, J. L. Peters, 1915.
M.C.Z. 65,536, Banes, Oriente, W. C. Forbes, 1914.
M.C.Z. 73,133, Remedios, Santa Clara, N. H. Bishop, 1864.
M.C.Z. 114,897, Holguin, Oriente, O. Tollin, 1904.
M.C.Z. 67,228, Buena Ventura, Oriente, J. L. Peters, 1915.
M.C.Z. 67,227, Buena Ventura, Oriente, J. L. Peters, 1915.

These fourteen birds all represent the light phase.

Nos. 46,649, 73,132 and 114,894 are clearly asymmetrical in coloration.

Another point of great interest is offered by M.C.Z. nos. 69,984 and 69,982 from Choco near Sosua, Santo Domingo. The first bird is very light, the second is distinctly dark, not as dark as the darkest Cuban birds but very clearly not of the light phase. This is noteworthy, for Todd on page 197 of his 'Birds of the Isle of Pines' says that the dark phase "does not extend to Haiti or Santo Domingo." Personally I do not believe for a moment that there is any question of more than a single variable species existing in Cuba. I unfortunately have no notes to show in what proportion cases of mixed matings occur between the color phases. I know that they do occur, and often.

I fully agree with Todd in not using the genus *Cerchneis*. The multiplication of genera in birds is reaching forward for characters scarcely of specific value, and it is a great pity that workers in this field do not stick to the sort of structural characters in use by mammalogists and herpetologists.

Sparrow Hawks are found everywhere over the Island, and they thrive in cleared and cultivated areas as well as in the wilder regions.

68. Pandion haliaëtus carolinensis (Gmelin).

OSPREY; FISH HAWK; GUINCHO.

Fish Hawks, called Guincho by the creoles, arrive in September in Cuba, and usually remain but a short time. A few stay through the winter, and a few undoubtedly breed. Gundlach saw one in summer near Cardenas, and Gosse reports that there are occasional nests found in Jamaica. I never have seen many Guinchos about either the coasts or the inland waters. The lighthouse keeper at Cabo Cruz told me that a pair nested near there annually, and I saw two Fish Hawks near the light in April, 1914. I have seen them along the Rio Cauto and about Cienfuegos Bay, and during the spring of 1915 Brooks and I collected a pair, evidently mated, at the Ensenada de Cochinos. We saved only one, however. Its fellow fell victim to the vicissitudes of Latin-American collecting. We were asleep in the back room of a tiny and very dingy country store; our day's booty was hung from the clothes-line outdoors, as we had come in late and tired and the night was cool. About midnight a strolling party of revolutionists came in to help themselves from the store,— and this they did with a will,— and then one spied our clothes-line. In a moment he had it cut down, the birds shaken off to the waiting pigs, and, as we were inside conversing discretely with the leader of the crew, we knew nothing of our sad loss until the pack had left. This, the revolution of the spring of 1917, brought us various woes, and the government *mobilizados* (volunteers) and the revolutionary *alzados* (patriots!) were about equally troublesome to the itinerant naturalist.

69. Colinus cubanensis (Gould).

CUBAN BOB-WHITE; CODORNIZ.

The typical Cuban Quail, a very distinct species, is today hard to find, except in the Isle of Pines and in remote localities. Introductions from Florida and Texas for re-stocking purposes, have sadly mixed the blood of the Quail about Havana and in the accessible central regions of the

Island. "Although the species is perfectly distinct and peculiar to Cuba, curiously enough, many Cubans believe that all the Quail were introduced." This belief, which he records, gave even Gundlach some concern, for he wrote, — I translate freely, — "Regarding this species the opinions of naturalists and natives do not agree. There exists the tradition that over a hundred years ago Colonel don José Cramen, Chief of Engineers in Havana, caused some Quail of both sexes to be brought and released in the suburbs of Guadelupe near Havana. They extended first westward to the Vuelta Abajo region, then toward the Vuelta Arriba, eastward. They did not arrive in the extreme Oriental Province until the Dean of the Cathedral in Santiago got some from Havana and released them there, now some seventy years ago. This was told me by my friend, don José de la Luz Caballero."

The original Cuban Quail probably was very restricted in distribution in early Colonial times, and was no doubt known only to the very few settlers who were familiar with the sterile savanna lands. Elsewhere the Island was wooded and offered no attraction to Quail until the process of deforestation was far advanced. Quail were introduced, not once but doubtless many times and to many different places, by planters who had no idea that there were Quail indigenous to Cuba itself. Gundlach late in life suspected that something of this sort might have taken place. There is no record of introduction to the Isle of Pines, and there only pure-bred birds occur. I have also seen typical Cuban Quail in numbers only about Guane, Mendoza and the remote savannas of Pinar del Rio. Elsewhere the birds usually are intermediate between the Floridian and Cuban types, and many are almost typical of the mainland form, since Florida has doubtless been the source of many purchased shipments for release.

The call is quite similar to the Northern Quail's, and their habits likewise. The great fields of cane afford a splendid range, and today Quail swarm over wide areas. Shooting is not allowed about cane plantations because the dry trash burns like tinder, so that Quail are safe in the *cañaverales* (cane plantations) during the winter open season, and out of season during the rains but few are killed and these only in the more remote districts.

70. Rallus elegans ramsdeni Riley.

Cuban King Rail; Gallinuela.

The native King Rail is really a rare bird, appearing even rarer still because it is so retiring and shy. One never knows where they may be

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1 Cane fields to the horizon. Soledad near Cienfuegos

2 The banks of the Damují near Cienfuegos

met with. A tiny pond choked with long grass in an open pasture, a stream meandering slowly through some open meadows, these are the favored spots. They do not frequent the great marshes of the Zapata region nor the larger lakes. Long lush grass in shallow water, and a quiet situation, and the scattered pairs live a retired and colorless existence. They may sometimes be flushed just once, when come upon very suddenly, but their presence is generally made known by tracks in the mud and the rattling call at dusk. When the rains come on they are sometimes seen in the drier pastures and grassy fields, doubtless because the water has become too deep for comfort in their wonted haunts.

Ramsden found a low bridge over a small stream, under which the Rails were accustomed to pass, and by trapping at this point he secured a number of specimens, including the series which, when sent to Riley, afforded the type of this distinct form.

71. Rallus longirostris cubanus Chapman.

Cuban Clapper or Mangrove Rail; Gallinuela de los Manglares.

The Mangrove Rails abound everywhere where mangrove forests fringe the coasts. They are heard often, and many cackling voices cry out, reacting to some sudden noise, a gunshot or a gunwale hit with an oar. They are seen only by chance, except that occasionally they have a liking for walking along the water's edge at dead low tide. The maze of trunks and aerial stolons, so familiar to those who have tried to walk among the mangroves, gives the Rails an ideal refuge; so also the clouds of mosquitoes emerging from the crab-holes discourage one who would wait for a shot. Thus Brooks and I have occasionally killed an odd Rail, and J. L. Peters in February, 1915, found a swamp being cleared of mangroves near Nipe Bay and shot a nice series of Rails which haunted the brush-piles of extirpated mangroves awaiting fire, and which were loath to leave their immemorial home. Our way of securing Rails was to find where the fringing zone of coastal mangroves was not too wide. Then with machetes we cut a path from upland to the shore. A fence about two feet high was set out down the path — a fence simply of sticks set side by side. In this little six-inch gaps were left open, every three yards or so. Traps in these gaps — well padded — would catch every Rail near by, and a fine series could soon be secured. We tried this in the Isle of Pines, on the shore of the Rio Casas, near Nueva Gerona, and in a few hours had a fine series of *R. l. leucophaeus* Todd, far more than would have been secured in months by the ordinary ways of hunters and collectors.

72. Rallus virginianus Linné.

VIRGINIA RAIL.

An accidental migrant which occasionally appears in the Havana market.

73. Pardirallus maculatus inoptatus (Bangs).

SPOTTED RAIL; GALLINUELA ESCRIBANO.

In Gundlach's time this bird was far from rare, and as it lived in the open pastures about ditches and reedy banks of streams as well as in swamps and fens, it often found its way to the Havana market. It apparently was confined to the Provinces of Havana and Matanzas, and there are no records for either the most eastern or most western Provinces of the Island. Ever since I first saw the single specimen mounted in Gundlach's collection, I sought news of this bird. I came to the conclusion that it had wholly disappeared, and was well satisfied to get a somewhat faded specimen, mounted for many years, from a case of stuffed birds in a Matanzas school; I owe my thanks, for helping me get this bird, to my dear old friend Carlos de la Torre, Rector of the National University of Havana. Then, in February, 1913, I chanced to visit the market at early dawn of the very day on which I planned to sail for Key West. There was but a single bird hanging in the principal stall where game was sold, and that was the beautiful fresh specimen which I brought Bangs, to be his type. I found that it had been sent in by a market gunner who lived near the Escalera de Jaruco. Since then I have made many efforts to learn more regarding the bird's habits and to get additional specimens, but in vain. One other specimen has come to the market, and this was secured by Victor Rodriguez, Professor de la Torre's amiable young assistant, and the skin is now in C. T. Ramsden's private collection in Guantanamo.

Thus there is just a chance that the Spotted Rail, — densely spotted with white on a brown ground color, and a perfectly unmistakable form, — still exists in very diminished numbers. Its range unfortunately coincided with the most densely populated part of the Island and the very region where the mongoose fast became abundant after its introduction. In Jamaica the Rail disappeared without a single specimen having been saved.

74. Porzana carolina (Linné).

Sora; Gallinuela Chica.

From October to April it is not uncommon to flush Soras from rushes and reed beds, but they never are very abundant and certainly not so common as they were said to be when Gundlach was alive.

75. Porzana flaviventer gossii (Bonaparte).

Yellow Rail; Gallinuela Chica.

Yellow Rails from Cuba and Jamaica have much less yellow on the under surfaces than typical birds from Guiana, so that I am constrained to reëstablish Bonaparte's name.

The little Yellow Rails simply swarm in Lake Ariguanabo and in the ponds of the Cienaga, although they always have been considered really rare and few birds have been less well represented in collections.

I owe my fine series to having learned by chance that they live far from shore in the extensive bonnet-beds. When frightened, they hop into one of the big rolled-up bonnet leaves and stay there quietly until convinced that danger has passed. I have thus caught them in my hands. They are so shy, and move so stealthily, that securing a series demands a quick eye and a finger even quicker on the trigger. By thrashing the bonnet-beds at Lake Ariguanabo with a long bamboo, many Yellow Rails have been flushed, to take short, feeble flights. I never have seen a single individual except where there were bonnet-beds, and I believe that they only frequent *terra firma* to build their nests and lay. Gundlach once saw an empty nest which he presumed was made by a Yellow Rail, but the eggs are wholly unknown.

76. Creciscus jamaicensis jamaicensis (Gmelin).

Black Rail.

Except for one found dead on the roof of a house in Havana, there is no positive Cuban record. Gundlach, who got this specimen, believed that

he had heard the call, but he never actually collected a specimen, and I never have got a clue which leads me to suppose that the Black Rail frequents Cuba at all. However, considering what is known of the bird's habits elsewhere, this is not convincing.

77. Gallinula chloropus cachinnans Bangs.

Florida Gallinule; Gallereta de Pico Colorado.

The common Gallinule is still an abundant bird in many places. About ponds and lakes, along rivers which run through open country, and even in tiny pasture sinks with standing water, it may always be found. These are canny birds and take refuge in the vegetation quickly, for they have learned that nowadays many people own guns and favor Gallinules to eat. They walk gracefully, picking up their feet like thoroughbreds, and swim and dive well. Occasionally they visit cultivated fields and play havoc with the maize. When they take to flight they run for some distance, and even when well under way they touch the surface of the water with their long toes after the manner of Coots.

The nesting season is long, and young birds may be seen running about over the floating vegetation with their parents at almost any time of year. The nest, to which access is gained by a sort of bridge or runway, is well known and has been often described.

The flesh is tender and of fine flavor, and many find their way to the markets of the larger cities. If the bird were not prolific, often raising eight or nine young, it would certainly be rarer and far more restricted in range than it is at present.

78. Ionornis martinicus (Linné).

Purple Gallinule; Gallereta Azul.

Today the Purple Gallinule is much more uncommon than the other species. It probably is much less common than in Gundlach's time. He speaks of its abundance and the damage done to rice fields and of its even eating ripe bananas. Today rice is not grown in Cuba, and the bird is not sufficiently abundant to find its way often into the banana

plantations (*platanales*). Its favorite haunts are the shores of ponds or streams where there are high thickets of cane or tall bushes, for the bird is an active climber. Instead of taking flight or running over the vegetation when surprised, it rushes to the nearest cover and climbs quickly to some dark leafy shelter. Even when undisturbed, it spends much time perching or stepping delicately from bough to bough. When wounded, this species also swims and dives well. As with its fellow, it nests at almost any time, and it builds similarly. Usually a tussock is doubled over for a foundation, and tall grasses are left to roof over the nest. Gundlach has noted that the young do not all begin to swim about at once, but one each day, evidently as the eggs are hatched in succession.

This lovely bird is always shot for the table, and for some reason certainly does not seem to be able to hold its own. Nevertheless, until the Zapata Swamp is drained, it will always have one great and inaccessible refuge.

79. **Fulica americana** Gmelin.

BLUEPETER; GALLERETA DE PICO BLANCO.

They appear in numbers each autumn on the Cuban fresh-water lakes. They stay but a short while, to re-appear on the return migration in April. Their cheery cackling and active ways of swimming or running about and chasing one another, make the birds invariably amusing and attractive to watch. To one familiar with Coots as they appear in hordes in the Florida lakes every winter, they offer no habits or customs in Cuba worthy of special note.

Some Coots, however, remain throughout the year, and the bird is well known all through the Island as a resident breeder. This breeding bird probably is *Fulica caribaea* Ridgway, a very well marked species. Its nesting is essentially like the Gallinules'.

80. **Aramus vociferus** (Latham).

LIMPKIN; GUAREÁO.

Limpkins are growing rare. Unfortunately they do not confine themselves to frequenting the swamps and morasses difficult of access,

but in Cuba prefer open lowlands with fenny sinks, the edges of high woods and even pasture lands. I often have seen them standing conspicuously on top of some brushy thicket far from water or even from marshy ground. Whereas in Florida they feed largely on Ampullarias, breaking the snails open by vigorous blows of their beaks, in Cuba they seem to prefer lizards and the larger insects. They are naturally stupid but soon learn to fear man, and in settled localities where they are hunted more or less they become very shrewd. Their flesh is excellent. The high, resonant cry, often repeated, and taken up by every bird within hearing, has given rise to the wonderfully apt native name, Guareáo. The flight of the bird, with legs trailing downward, neck outstretched and wings snapping heavily, is very crane-like. The character of the flesh, rich and dark in color, the flight, and the voice, suggest a relationship to the Cranes far more than to the Rails. The nesting habits, however, are very different, for they build not only in rushes and upon depressed grasses but in trees upon horizontal limbs and in bunches of parasitic vegetation. Gundlach has found the nests in every month.

The Guareáo is so conspicuous that it often is seen from the train window while passing through the Province of Camaguey, which is largely given up to pasture land. I found it abundant too about Aguada de Pasajeros and the borders of the Zapata Swamp. In western Cuba it is rare, and much of the Province of Oriente is still too much overgrown with forest, since it is so hilly, to attract Limpkins, for they are wholly birds of the more open lowlands.

81. Grus mexicanus nesiotes Bangs and Zappey.

Cuban Sandhill Crane; Grulla.

The Cuban Crane still exists in some numbers on the great open, sterile savannas of western Pinar del Rio. There are a good many about Viñales, Mendoza, Guane and the outlying bare wire-grass hills with scattered pines. Elsewhere they are rare. I have seen a few in southern Matanzas Province, about Alacranes and Union de Reyes, and a few north of Aguada de Pasajeros, and also along the line of the old *trotcha* near the south coast. I never have seen any east of the *trotcha*, that wide, cleared zone, with its tumble-down blockhouses, which the Spaniards established from north coast to south, from Morón to Jucaro, to try to prevent rebel bands from moving eastward or westward during the Wars for Independence. In Cuba, as in Florida, the Cranes live in pairs or families,

not regularly in flocks, but occasionally several families will unite for aerial manœuvers, when they fly in characteristic goose-like formation.

They are shy and have fine power of vision, but still they are killed, because they persist in returning to favorite feeding grounds, which often are fresh burns. An area of grass land may be burned over and a hide made, and before long Cranes will appear, to eat the scorched reptiles and burned insects, and to dig with their bills for succulent roots and beetle larvæ in the soil now denuded of matted grass.

In Florida the Crane always nests on a little island of its own building in needle-grass ponds, but in Cuba Gundlach reports them hiding their nest under some bush or shady tussock of high, rank grass. They are not often seen about water in Cuba, whereas in Florida they occur in the flatwood ponds as often as in the open, piney prairies.

In the Isle of Pines Cranes are not uncommon, and we have secured specimens there. They often are kept as pets and become very tame. Cackling loudly whenever strangers approach,— and their voices can be heard an incredible distance,— they make excellent watch-dogs.

82. **Larus argentatus argentatus** Pontoppidan.

HERRING GULL; GALLEGO.

Herring Gulls are very rare off the Cuban coast, which is remarkable, as they often follow ships to Florida and in winter are by no means uncommon in Key West harbor. I have no Cuban records, and Gundlach in over fifty years' residence gleaned but four. A young bird was obtained by Lambeye in the Havana market and, years later, an adult male was procured there by Gundlach himself. Later he killed one in Matanzas Bay, and one from a boat near Cardenas.

83. **Larus atricilla** Linné.

LAUGHING GULL; GALLEGO.

The Laughing Gull is common, widespread, and reported by Gundlach to breed on some of the cays and beaches along the coast. I never have seen one of these breeding colonies, but I have seen numbers of the birds.

They abound especially about Matanzas and Manzanillo, at Belig near Cabo Cruz, in Cienfuegos harbor and along the south coast of Camaguey from Jucaro to Casilda, the port of Trinidad. I often have heard of the Gulls' making the Pelican disgorge by flapping their wings about its head and then flying off with the fish, only to lose it in turn to that brigand of the sky, the Man-o'-War Bird. This, however, I never have seen.

84. Phaetusa chloropoda (Vieillot).

There is a single Cuban record, based on an immature individual got by Charles T. Ramsden from Nipe Bay, May 28, 1909 (Auk, vol. 29, p. 100, 1913).

85. Sterna maxima maxima Boddaert.

ROYAL TERN; GAVIOTA.[1]

Royal Terns are often seen about the coasts and are said by Gundlach to nest upon some of the coastal cays.

86. Sterna sandvicensis acuflavida Cabot.

CABOT'S TERN.

While this Tern is often seen about the few scanty beaches of the cays and coasts, its nests or eggs never have been found in Cuba.

87. Sterna antillarum antillarum (Lesson).

LEAST TERN.

Common about salt-marshes and beaches, especially about the islands of the north-central coast. It is known to breed.

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[1] All Terns are generally called by this name, and, as with our country and fisher folk, the various species are not differentiated.

88. Sterna dougalli dougalli Montagu.

ROSEATE TERN.

A rather rare bird about the coasts. Gundlach believed that it occurred principally, if not wholly, off the south coast. It occurs sparingly on both sides of the Island. It is not known to breed.

89. Sterna anaetheta melanoptera Swainson.

BRIDLED TERN.

Gundlach reported a large breeding colony at Cayo Mono Grande. I have not found the bird breeding, although I often have seen Bridled Terns off the coast.

90. Sterna fuscata fuscata Linné.

SOOTY TERN; GAVIOTA MONJA.

Gundlach gives a long account of the methods of feeding of this and other Gulls and Terns, and of their nesting at Cayo Mono Grande and Cayo Piedras near Cardenas.

91. Gelochelidon nilotica aranea (Wilson).

GULL-BILLED TERN.

A very rare bird. Gundlach records but two specimens, one taken at Jucaro and one at Guantanamo.

92. **Hydrochelidon nigra surinamensis** (Gmelin).

BLACK TERN.

Adults and young have been reported often about both coasts and fresh-water lakes. Gundlach in his account gives no specific date of arrival or departure.

93. **Anous stolidus stolidus** (Linné).

NODDY; GAVIOTA BOBA.

Not generally seen about the coasts until one approaches a breeding-ground, when they fairly swarm. They nest on many bushy cays in the same manner as has been so often described at Dry Tortugas.

94. **Rhynchops nigra nigra** (Linné).

BLACK SKIMMER.

An excessively rare or accidental visitor. There are two records, both by Gundlach, one for the south coast and the other for the Bay of Matanzas.

95. **Recurvirostra americana** Gmelin.

AVOCET.

Another accidental visitor, extremely rare. Gundlach killed one in a salt-pond at Punta de Icacos and got one in the Havana market.

96. **Himantopus mexicanus** (Müller).

BLACK-NECKED STILT; ZANCUDO.

I saw my first Stilts in Cuba from the top of the great lighthouse at Cabo Cruz in the spring of 1914. This lookout gave over a varied scene and one worth a moment's digression to describe. The peninsula of Cape Cruz itself is low and rocky, dry, arid and covered with cacti, thorny acacias and the like. Inside the hook to the north are marl flats and patches of mangroves, enclosing shallow salt-ponds which broil and glisten and dance in the burning sun. Up the coast toward Belig and Niquero extended the lowland forest, rich with mahogany, sabicú and many other precious woods. This forest caught wet winds, which the Cape did not, and had already attracted foreign capital, assuring its early reduction and ultimate destruction. Eastward from the Cape rose the great ridge of the Sierra Maestra, El Monje, Ojo de Toro, and far in the blue distance Turquino itself. Our midnight arrival at the Cape in a tiny shallop — I was with de la Torre — had resulted in the clanging of heavy doors as the 'watch' suddenly awakened and felt that bandits, always to be thought of, had this time really materialized. We had kicked our way through the cacti in the bright moonlight, and, tired and very sweaty, we hoped for a place to sleep. It was no small task to convince the sturdy Spaniards that sleep, not robbery, was our one interest. We soon became friends; the light-keepers of Cuba, all Spaniards, are a fine, sturdy crew and hospitable to a fault. We soon came to use the light as a lookout, and down in the salt-ponds we saw the Stilts every day. A small resident band, of perhaps twenty individuals, fed regularly through the hottest hours in a pond so deep that the water reached nearly to their bellies. The flight, with neck and long legs extended, is unlike that of any shore bird and reminds one more of the Jaçana's. I saw Stilts also occasionally about fresh waters and collected one at Aguada de Pasajeros on February 4, 1913. I always have found them very shy and hard to approach. Gundlach found the nest and eggs in May and has described them.

97. **Capella gallinago delicata** (Ord).

WILSON'S SNIPE; BECASÍN.

A regular winter visitor, and one which may be really abundant if the rains have been long and hard so that extensive wet pastures and low, moist

meadows do not dry out through the winter. There are, however, few localities where there are enough birds to give one really good shooting. The vast majority are scattered hither and yon, in pairs and single birds, where there are little sinks of moist land. At times, however, I put up larger numbers about the edge of the Cienaga near the Rio Hanabana.

98. Limnodromus griseus griseus (Gmelin).

DOWITCHER.[1]

Arrives in numbers in October; many stay through the winter, usually remaining in rather large flocks. Since a few birds usually were to be seen in summer, Gundlach thought that it might occasionally breed. However, it has not been found to do this.

99. Limnodromus griseus scolopaceus (Say).

WESTERN DOWITCHER.

A very rare visitor.

100. Micropalama himantopus (Bonaparte).

STILT SANDPIPER.

Seen once at Cabo Cruz on the spring migration. Gundlach records its regular passage through Cuba in September and again in April.

101. Calidris minutilla (Vieillot).

LEAST SANDPIPER.

A very common winter resident, often fairly swarming on the mud-flats about the mangrove swamps all winter long, and usually appearing in flocks mixed with other species of shore birds.

[1] In general all Sandpipers are called Zarapico or Titere; the larger Plovers are called Pluvial; the lesser forms, and by many all Plovers, are called Frailecillo.

102. **Calidris maculata** (Vieillot).

PECTORAL SANDPIPER.

The Pectoral Sandpiper arrives in September, and some remain until April. Gundlach once killed a number, in July, 1857, in a swamp near Bayamo.

103. **Calidris fuscicollis** (Vieillot).

WHITE-RUMPED SANDPIPER.

A very few White-rumped Sandpipers arrive in early October; they remain but a short time and then disappear, to come again in April and early in May.

104. **Ereunetes pusillus** (Linné).

SEMIPALMATED SANDPIPER.

According to Gundlach, the Semipalmated Sandpiper arrives in September and retires again in April. Peters collected some that were flocking with Least Sandpipers at Nipe Bay early in March, 1915.

105. **Ereunetes mauri** Cabanis.

WESTERN SANDPIPER.

Recorded once by Gundlach (Journal für Ornithologie, 1856, p. 419).

106. Crocethia alba (Pallas).

SANDERLING.

Gundlach's records for this species are not very convincing. He says that they are seen only on salt-water beaches, which is entirely believable, but also that he has killed a few in September. They have not reached the coast of Massachusetts by September. He has no further records, and I never have seen the bird in Cuba although I have in the Florida Keys.

107. Limosa fedoa (Linné).

MARBLED GODWIT; ZARAPICO REAL.[1]

Now excessively rare. Gundlach years ago killed a few in September on the beaches near Cardenas and Jucaro.

108. Limosa haemastica (Linné).

HUDSONIAN GODWIT.

Only one record, a single specimen secured from the Havana market by Gundlach.

109. Tringa melanoleuca (Gmelin).

WINTER YELLOWLEGS.

Small bands appear during spring and autumn migrations; possibly a few are winter residents. They are called up and shot, as in New England.

[1] 'Royal' (*Real*) is a common augmentative, and 'Zarapico Real' is used for the large Godwits, Curlews, etc.

110. **Tringa flavipes** (Gmelin).

SUMMER YELLOWLEGS.

Very much more common than the preceding species. Large numbers pass a few days in the fresh-water marshes, and sometimes about the mangroves, in September, and again in February and March — Gundlach says April, but they really appear earlier.

111. **Tringa solitaria solitaria** Wilson.

SOLITARY SANDPIPER.

Passes through Cuba in pairs or trios — not in flocks — from late August to mid October. Gundlach does not mention its re-appearance in the spring, but Zappey shot one on the Isle of Pines, May 11, 1904.

112. **Catoptrophorus semipalmatus semipalmatus** (Gmelin).

WILLET.

I know that the Willet breeds in the Bahamas, and Gundlach surmised that it might do so in Cuba. He saw birds in June and July about La Caimanera in Guantanamo Bay, and had seen them elsewhere at almost all times. I have seen but a few Willet in Cuba, on the west coast *salinas*, those shallow, marly salt-ponds near the west shore of the Bay of Cochinos.

113. **Bartramia longicauda** (Bechstein).

UPLAND PLOVER.

Years ago the Upland Plover appeared in the cultivated fields of Cuba and followed close at the ploughman's heels. They usually came in

late August or early September and re-appeared in April or May. I never have seen a single individual.

114. **Tryngites subruficollis** (Vieillot).

BUFF-BREASTED SANDPIPER.

A single record by Gundlach of one killed near Cardenas in April.

115. **Actitis macularia** (Linné).

SPOTTED SANDPIPER.

A few are seen each year during migration; it does not arrive in flocks. Mr. Peters collected a single female at Preston, near Nipe Bay, March 2, 1915.

116. **Numenius hudsonicus** Latham.

HUDSONIAN CURLEW.

I have, on various occasions, seen a few Curlews about the mangrove shores. They wade the muddy shallows and, should wind or tide raise the water, they perch in the mangrove trees — most un-curlew-like. Gundlach's records are about like these of mine. He once saw a few in October in a salt-marsh at the mouth of the Rio Cauto, and some in June and July about Jucaro, but he adds that he had seen them among the cays of the coast at various times.

117. **Squatarola squatarola cynosurae** Thayer and Bangs.

BEETLE-HEAD; PLUVIAL.

An occasional pair or trio may be seen during any of the winter months on the exposed, eroded limestone shores. No large flocks are seen.

118. Pluvialis dominicus dominicus (Müller).

GOLDEN PLOVER; PLUVIAL DORADO.

I have seen no Golden Plover in Cuba. Gundlach gives some account of its habits, and remarks that it occurs from September to April. He says nothing about its abundance, and one is not very convinced that most of his observations do not apply to shore birds in general more than to Golden Plover in particular. Nevertheless his description of the plumages is very good indeed.

119. Oxyechus vociferus vociferus (Linné).

KILLDEE; FRAILECILLO.

A Killdee is resident in Cuba, but beyond doubt continental migrants also are to be found there in winter, as Todd has shown this to be the case in the Isle of Pines. I often have seen birds at all times of the year, but never have collected any skins.

120. Oxyechus vociferus rubidus Riley.

WEST INDIAN KILLDEE.

Gundlach's description of the nest and eggs applies beyond doubt to this resident race which has been noticed since his death. Some skins that I have just received show that this is a very well-marked form.

121. Charadrius semipalmatus Bonaparte.

RING-NECKED PLOVER.

Seen by Gundlach in September and also in June among the coastal cays. This led him to believe that the bird might nest in Cuba. As a

matter of fact, these late June birds are early returning migrants. Mr. W. W. Brown found this to be the case during his visit to the Cayman Islands.

122. Charadrius melodus Ord.

PIPING PLOVER.

A few reported by Gundlach as having been seen on the beach at La Maya near Matanzas. All these birds were in immature plumage. I have seen them occasionally in early spring on the white sandy stretches back of the rocky beach between Morro Castle and Cojimar.

123. Charadrius nivosus tenuirostris (Lawrence).

SNOWY PLOVER; FRAILECILLO.

Gundlach first found this little resident Plover breeding near La Caimanera in July, 1858. The three eggs were laid in the foot-print of a horse. The parents he collected and sent to G. N. Lawrence, who described the bird, as *Aegialitis tenuirostris*. Later the type was sent to Ridgway, who considered it identical with Cassin's species *nivosus*. Later still the bird was given subspecific rank. I have several times seen birds which I believed were this Plover, but always when engaged on some other errand than shooting birds; so I have no Cuban specimens at hand.

124. Pagolla wilsonia rufinucha (Ridgway).

WILSON'S PLOVER.

Another uncommon resident, found about beaches and salt-marshes. According to Gundlach it lays four eggs in a concavity without any lining, usually in May or June. Unfortunately I do not know the bird from autopsy.

125. Arenaria interpres morinella (Linné).

TURNSTONE.

A few may be seen every winter on the æolian limestone reefs and shores, and much more rarely about beaches. Gundlach thought that it might nest in the cays, but in this case as with others he doubtless mistook early returning migrants for summer residents.

126. Haematopus palliatus palliatus Temminck.

OYSTER-CATCHER.

Very rare and shy. Found usually in small family groups. Seen only on the most retired coasts or among the cays. It may nest in Cuba, and probably does so. Gundlach once saw it in June.

127. Jacana spinosa violacea (Cory).

GALLITO.

To the Northern bird lover who visits Cuba for the first time no bird is at once so engaging and so wholly satisfactory, for it crystalizes immediately the certainty that here at last is one common and conspicuous creature wholly foreign to his ken. Cuba swarms in winter, the visitors' season, with Northern migrants, and many of the characteristic, peculiar and purely tropical birds are shy and retiring and are never seen by the casual traveller. The gaudy little Gallito, however, frequents every small roadside pond, and even comes to flooded pastures, which offer a suitable but temporary abiding place only after heavy rains. The Jaçanas run about the shores and over the lily pads, ever on the move. They chase each other and appear constantly pugnacious, and every few minutes they rise for short flights which show the brilliant golden yellow of their wings. When they alight they stand a second with wings upraised after the fashion of the Upland Plover. In the smaller ponds it is unusual to

see more than a pair or two, but on the great morasses of the Cienaga, with many square miles of aquatic vegetation, the Jaçanas may be seen daily in large bands. Their voice is a sharp metallic bark, high-pitched and oft repeated.

The nest, simply a mass of decayed grasses and lily stalks, is placed on floating plants. They often hatch several broods a year. The young dive almost as soon as they are hatched, and hide with only the beak above the surface. The mother bravely defends young and nest, crying out and flying to and fro, not only urging the young into hiding, but soon causing a sympathetic commotion among all the Jaçanas within hearing.

Gallitos occur throughout the whole Island, but since ponds are more frequent in middle and western Cuba than in the Oriental Province, the greater part of the population is concentrated where suitable habitat exists.

The taxonomic status of the race *violacea* has been adequately discussed by Todd in his 'Birds of the Isle of Pines' (l. c., p. 217).

128. Starnoenas cyanocephala (Linné).

Blue-headed Quail Dove; Perdiz.

The Blue-headed Quail Dove, on account of its brilliant blue crown, cannot be confused with any other species. Formerly it was a common denizen of all the lowland forests of the Island, where the soil was not too dry. Today it is greatly reduced in numbers, both because it is so extensively trapped for food and because the forests are being constantly cut away. There are two ordinary methods of trapping Ground Doves in general use among the country people in Cuba. One involves the use of a *casilla*, a cage made of boughs or twigs, tied one upon the other, but at different intervals so that the complete structure is pyramidal and about two feet square and a foot high. This is put out in the open woods and baited with *tripa de guira*, the mushy inner pulp of the wild calabash, which is full of seeds. The *casilla* is tilted, and a 'figure-four' drops the contrivance when it is touched by the bird fussing about inside. Sometimes a small dish of water serves for bait. Another method is to erect a net on hoops of creeper, and put bait beneath, where a decoy either alive or stuffed is often put out conspicuously. The hunter, in hiding, imitates the *húp úp* of the bird by means of a small hollow gourd.

The bird is called Perdiz because of its firm white flesh and the noise it makes when flushed. In common with the other Ground Doves, it

prefers to run away from an annoyance rather than take flight. I have collected a good many by lying prone on the forest floor and simply watching for the bird to walk about. Much of the lowland forest in Cuba is flooded during the rainy season, often for several feet, and this eliminates the very low undergrowth, so that one may often see long distances with the eyes near the level of the ground. Standing up, it is impossible to see off at all, so thick are the vines and creepers. In 1915 I found Perdizes very common in the low woods about five miles inland from Jucaro and Palo Alto. I shot a good many, and the *guajiros* had dozens caged to sell to the planters about Ciego de Avila, who eat them. This forest today is largely gone. About the cayos of the Cienaga where I got the other Ground Pigeons in numbers, the Blue-headed Doves were very rare, although I shot a few specimens. In Oriente the bird is still common where it has not been trapped too hard, and here it occurs in the highland forest where also suitable open woods are sometimes to be found.

129. Oreopeleia chrysia (Bonaparte).

KEY WEST QUAIL DOVE; TORITO or BARBEQUEJO.

This Ground Dove has habits much like those of the Perdiz and is often caught for food by the same means. Its flesh is excellent, although less esteemed than the Perdiz. It is known as 'Torito,' the Little Bull, from its habit of bobbing, or 'Barbequejo,' from the moustache-like markings. This, like the following species, is also called 'Boyero,' or Ox Driver, for its note, an oft repeated and prolonged monosyllabic *coo*, somewhat resembles the noise constantly made by men urging their oxen to strain to a heavy load. The Torito is found in dry upland woods as well as in the low country, and I have flushed a good many in the low but thick forest of the limestone hills, or *sierras*, of Pinar del Rio. I also shot one once on the Sierra de Casas of the Isle of Pines, in low, scrubby second-growth (*manigua*), hardly to be called a forest. In the cayos within the Zapata Swamp it was far less common than the Ruddy Quail Dove; nevertheless we often shot a few for food as well as to skin.

The Geotrygons, as I still like to call them, walk slowly about on the ground with the head usually pulled in and not extended, and not bobbing except when disturbed or frightened. Then they bob vigorously, as does the Perdiz all the time, and this species is, I think, the shyest and most prone to take flight of any of the group.

Gundlach found nests from February to June, little flat platforms of sticks set on some low bunch of epiphytes.

Nowhere abundant, indeed a rather rare bird throughout its considerable range, the Key West Quail Dove is one of the species which sooner or later will completely disappear.

130. Oreopeleia montana (Linné).

Ruddy Quail Dove; Boyero.

With habits essentially like those of the preceding, this forest beauty is much more abundant and more confiding. By standing watching some little sunlit glade, or lying flat on one's belly on the damp forest floor, patience was generally rewarded by a shot at the Ruddy Quail Doves, provided one chose a suitable haunt in which to lie in wait. None of the Quail Doves occur in all situations where, from the character of the terrain, one might expect them. They were really abundant, however, in the low woods between Zarabanda and San Francisco de Morales and the Zapata Swamp, and equally so in a very fine stretch of damp woods which I have visited but once, far to the south of Bolondron. Here a pig ranch, kept by a hospitable Señor Perez and called Hato Jicarito, stretched its limits to the Rio Hatiguanico. The pigs ran wild, and little of the land was cleared. There was some second-growth, but much was virgin forest, too inaccessible to make the timber worth while, and in 1913 the nearest sugar mill, *Armonía*, was too far off to grind cane should Perez plant it. I often wonder whether or no this happy state of affairs still continues. It is almost certain that some one of the host of new mills has run in a railway to haul out the splendid hardwood for ties and to encourage small planters (*colonos*) to cut the woods (*monte*) and plant cane in the slash (*tumba*).

131. Oreopeleia caniceps (Gundlach).

Camao.

This splendid bird is one of the ornithological treasures of Cuba. Its rich metallic blue mantle and delicate gull-gray crown mark it conspicuously. Once, more widespread, it is now rare and restricted in

range. Formerly it occasionally was caught by the dove trappers, and still once in a great while it is brought to Guantanamo. In this way Charles T. Ramsden has got the bird alive and has obtained a few skins for his cabinet. Dr. Henry Bryant had a skin in his collection, labelled "Remedios, 16 Mar. 1864," but in all northern Santa Clara there is now no wood where it might persist. Gundlach knew of it from Yateras, whence the Guantanamo specimens still are obtained; from near Bayamo where I could get no news of it whatever; from near the old plantation La Fermina near Bemba, now Jovellanos, a region now wholly given up to cane and pasture; and from La Maya at the entrance to Matanzas Bay. Here there is still some uncleared land with dense *manigua*, but hardly offering, at first sight, a refuge for a bird of the heaviest wet forest. It is to two large wooded cayos, by no means easy of access, called La Isla and Cayo Yaguajusta, at the edge of the Cienaga, some miles southwest of Aguada de Pasajeros, that the hunter who would test his patience and good luck must go to get this bird.

I have tried for it many times, and have spent day after day creeping about the forest floor, watching and waiting, working slowly toward the spot where oft repeated *hūp-hūp-hūp*, peculiarly resonant and far-reaching led me to hope for a shot. The bird is very shy, so retiring in fact that few of the professional hunters even know of its existence. Francisco Llorente gave me my first clue to the Camao, and it was with him that I shot the first one, just at evening. It came strutting out into the waning light to cross a muddy stream on a greasy, slimy log. It fell into the water, a gorgeous gem in as plain a setting as one could well imagine. Then, hunting alone, I soon found that my patience and somewhat less hasty shooting gave me distinct advantages, until at last a beautiful series, safely dried, allowed me to close with great satisfaction one of the most unexpectedly successful chapters of my Cuban excursions.

The nest of *caniceps* has been found but once. This was in August. Gundlach unfortunately broke the eggs. No mention is made of their number, but he noted that they were similar in appearance to those of the other Quail Doves. These are usually three in number and ochraceous white.

132. Chaemepelia passerina insularis (Ridgway).

Cuban Ground Dove; Tojosa.

The little Tojosa soon becomes a familiar friend. It picks its way daintily about the dooryards and abounds everywhere in cleared fields and

gardens. Too small to offer a tempting morsel, it is not shot and, fearless of man, it prefers cultivated to wild lands, so that its future is safe beyond that of most of its feathered compatriots. Its voice, soon familiar, is a single simple sad tone, a prolonged *hūp*. At any time after February it makes its slipshod platform nest of twigs and grass in the lower branches of some citrous tree or on airplants growing very low. For so small a bird, its flight is strong, direct, and rapid, beginning with much noisy snapping of wings, like our domestic pigeons', and wholly unlike the gamey whirr of the Quail Doves.

133. Zenaidura macroura macroura (Linné).

Cuban Mourning Dove; Rabiche.

In spite of constant persecution the Rabiche still exists in enormous numbers. It is a far more common bird than is its Northern ally, our Mourning Dove — even when that is concentrated on its winter range. This is the favorite game bird of Cuba, since its habits make possible a large bag with very little effort. During the spring and summer the Rabiches are scattered in pairs far and wide, but once the nesting season is over they begin to flock. They have their regular roosts, called *dormitorios*, to which they repair year after year. These may be in some outstanding grove of royal palms or some clump of tall trees in a wide pasture. There is a famous roost in the high willows in the middle of Lake Ariguanabo. They also choose regular drinking places to which they repair morning and evening, and at these *bebederos*, or at the roosts, the hunters lie in wait for the Doves and kill great numbers. They are prized for food and many get into the markets.

Their voice is somewhat like our Carolina Dove's but more broken into syllables, and Gundlach has well rendered it as *tuí-yu-tu-tutu*. Nesting begins in late February or early March, and lasts through the summer. As with our Doves, two white eggs are laid upon the usual perilous platform of crooked sticks.

134. Zenaida zenaida zenaida (Bonaparte).

Zenaida Dove; Sanjuanera.

Why this Dove is called 'Sanjuanera,' or what possible relation it can have with any tradition connected with St. John, I have never been

able to learn, but through all western or central Cuba this is its name. As is so often the case, the name in use in Oriente is different from that of the rest of the Island and, likewise characteristically, the name is of Indian origin, being *Guánaro*. While the last of the pure-blooded Caribs died a few years ago, nevertheless there is much Indian blood evident among the peasants of Oriente; far more than is usually known to exist. Indian features, the '*typo indio*,' are common in Baire, Jiguaní, and the Sierra Maestra generally, as well as about El Caney and in the remote settlements west of El Cobre.

This wide-ranging Pigeon is more shy and retiring than the Rabiche, and more solitary. Nevertheless it is found in varying numbers throughout the Island. Its noisy flight is often startling. It is found rarely in deep forest, though Brooks and I have taken it in the high woods about the Cienaga. It is far more characteristic of open savanna lands and the shady second-growth *manigua* along water-courses in pastures and the outer boundaries of cultivated fields. It shuns habitations, and is seldom seen in cultivated land; in fact it feeds but little on the ground. Its flesh is excellent.

Gundlach found nests from April to July, the usual shabby platform with two eggs, on bunches of epiphytic bromeliads or on some horizontal limb. A Dove so fond of lowland solitudes, yet generally shunning the swamps, is likely to suffer from the increasing intensive cultivation unless it changes its ways.

135. **Ectopistes canadensis** (Linné).

Passenger Pigeon.

The Passenger Pigeon, before its extinction, was a rare accidental visitant to Cuba. It never even had a native name. There are two recorded specimens, a female killed by Gundlach at Triscornia on the Bay of Havana and a male procured in the Havana market. These are both now preserved, well mounted, in the Museo Gundlach.

136. **Melopelia asiatica asiatica** (Linné).

White-winged Dove; Paloma Aliblanca.

The White-winged Dove is entirely confined to the eastern Province of Oriente. It is not an uncommon species, and usually is seen in small

bands about ploughed fields and open pastures. I have had but few chances to observe the species, and have seen no specimens from west of Holguin.

137. Columba leucocephala Linné.

White-crowned Pigeon; Paloma Cabeziblanca.

The White-crowned Pigeon is of irregular appearance in any given locality, its presence depending on the abundance of the fruits upon which it feeds. It is essentially a coastal form, and one which is always gregarious. It roosts in great hordes, usually on some mangrove islet, and bands sally forth each morn to feed, returning from their distant foragings at dusk. Then they rush and swirl into the greater resorts, or *palomares*, in incredible hosts. Famous roosts are Moraine Cay north of Grand Bahama, where I have shot, and Green Cay south of New Providence. Gundlach speaks of their seldom being seen in Cuba except when nesting, which they do at various seasons of the year. This intermittent appearance is noticed everywhere. They are in the Florida Keys in summer only, but not every summer in equal numbers; in certain of the Bahamas they abound at one season, elsewhere at others. The fact is, the individual bands are capable of long flights, and move far and wide as food supplies dictate. Great numbers are slaughtered by hunters, who build an ambush near roost or rookery and kill the returning birds as they fly in just before dark. Unfortunately this leaves many young birds to starve.

138. Columba squamosa Bonaterre.

Scaly-naped Pigeon; Torcaza Morada.

In western and central Cuba this beautiful Pigeon is by no means common at the present time. It is a highland bird but not exclusively confined to mountain ranges. One finds the Torcaza Morada usually perched high on the dead branches of some towering tree, most often on cliffs or steepish slopes. The birds seem sluggish and make short flights, booming their heavy, sonorous call through the heat of the day. Attempt to approach, and the bird is off, for no Pigeon is more alert. Its flesh is excellent, and the body is heavy beyond other local species. In appearance

in the field it is larger and darker than a domestic pigeon, and it has a patch of brilliant metallic feathers on each side of the neck. It is never terrestrial. Ramsden has given an excellent account of the persecution it suffers in Oriente, where it appears at intervals in great numbers. Ramsden also records breeding rookeries which Gundlach never found. This gregarious habit is beyond a doubt confined to the wild Eastern Province, where the Scaly-naped Pigeon still is more abundant than elsewhere. For never elsewhere have I met with numbers which would allow of killing five thousand individuals in a couple of weeks in one locality.[1] It still occurs in the regions mentioned by Gundlach, in the mountains of Vuelta Abajo and Trinidad, but in both these highlands it may today be seen regularly only in pairs, trios, or small bands, and probably never over a few dozen in a day — and many days far fewer would be seen. Slaughter for food and sport has already very greatly reduced this splendid species, and it needs now protection, which probably will not be granted to it, and which, if granted, cannot be enforced.

139. Columba inornata inornata Vigors.

PALOMA BOBA.

Formerly very abundant, now an excessively rare bird. Recorded by Gundlach as seen in great numbers in the Cienaga, about the shores of Guantanamo Bay and the Isle of Pines, but not in the interior of the Island. It is next to extinct about Guantanamo; Ramsden has, I think, but a single skin, and until a few days ago I had believed it extinct in the Cienaga. It appears, however, that a competent friend has located a small region within the Swamp where a few birds still occur. I have just received from him a single specimen, so the bird is not wholly gone. On the Isle of Pines there were a few as late as 1912, when Link secured the series upon which Todd based his local race *proxima*. Brooks and I have visited that island again and again at all times of the year, but no Pigeons were seen from 1915 to 1918. Gone it probably is today from all of Pinar del Rio and from the Isle of Pines. This was inevitable. 'Paloma Boba,' the Fool Dove, was unfortunately, in some localities at least, a well-deserved name. Such a stupid bird, so good to eat, never could survive.

[1] Auk, vol. 30, p. 271, 1913.

The only Cuban specimen in the Museum of Comparative Zoölogy was an old Lafresnaye bird, with no data, until this one just killed in the Cienaga was received. In appearance and size it is like the preceding species, but it lacks the metallic patches on the neck.

140. Ara tricolor Bechstein.

Cuban Macaw; Guacamayo.

The Cuban Macaw, a fine red and yellow species, began to disappear early. It apparently never was widespread, and I know of no tradition that it ever was found in Oriente. I was told in Guane that no Macaws were seen in western Pinar del Rio after the great hurricane of 1844. There were still a few in the Zapata Swamp until about 1850. Gundlach collected a number of birds from the last band which came regularly to feed in a small group of paraiso trees in the yard or *batey* of the *colonia* at Zarabanda. These trees are still standing, and I have talked with an aged planter who was with Gundlach when he shot his last pair. One of these, and a couple of Cuban Ivory-billed Woodpeckers, Gundlach took with him to Porto Rico when he left Cuba during the early years of the Ten Years' War. As is well known, he was in very straightened circumstances, and, being scrupulously careful in repaying favors, he gave his birds, when he returned to Cuba, to an apothecary named Blanco, who had befriended him. This Macaw is beyond doubt the one secured for the United States National Museum after the American Occupation. The Woodpeckers, I believe, are now in the American Museum of Natural History in New York. There is a second Macaw in the Museum in Washington, and one in the Museum of Comparative Zoölogy (no. 72,526), which formerly was in the Lafresnaye collection. It is in fine condition, but has one wing clipped, which suggests that it was a cage-bird secured in France. I know of but a single specimen now in Cuba. This is in the Gundlach collection in Havana. The bird formerly in the cabinet of the Havana Academy of Sciences disappeared a few years ago, and gossip has it that, having been surreptitiously extracted, it found its way to a famous private collection abroad. There was said to have been another in the excellent little Museum in Cardenas, but this probably has been destroyed by insect pests, as also the bird formerly in the Matanzas Institute.

Gundlach described how the peasants would locate a pair nesting in a hollow palm and then wait until the young were well grown. These were

caught after cutting down the palm. Thus it is probable that a good many may have found their way to Europe as pets. The adults were killed to eat, and were said to have been stupid and slow to take flight when approached.

Gundlach collected no specimens in the Isle of Pines, and the records for that island rest upon tradition only, albeit a reasonably credible one.

141. Aratinga euops (Wagler).

CUBAN PAROQUET; PERICO; CATEY.

The Paroquet is called in western Cuba Perico, an abbreviation for Periquito, and in Oriente Catey. It once was abundant and widespread. Today it is disappearing fast. Dr. Henry Bryant made a series of skins at Remedios in 1864. Today it is probable that the small bands which I saw in the Cienaga in 1915 are almost the only ones west of Camaguey. The same year I found it still abundant in the forests near the south coast, not many miles west and northwest of Jucaro. These forests are probably all now felled. In 1917 I saw a small band near the Hanabanilla Falls in the mountains south of Cumanayagua, and there are still a few in the mountains near Trinidad. Bands are still to be met with in the Guantanamo Basin, but their numbers are everywhere diminishing. The Paroquets cannot adapt themselves to changed conditions, they are essentially birds of the virgin forest. They are stupid to a degree, and return again and again to the calls of a wounded bird. Although they easily can become inconspicuous in dense foliage by simply remaining motionless, they seldom do so for long. Overcome by curiosity, even soon after being frightened, they recommence to clamber about, stretching out their necks, and soon are to be heard chattering and squawking in a perfectly indifferent manner. Many are caught for pets; and the higher price which they are now beginning to fetch, makes the pillaging of the remaining nests all the more worth while. They nest like the Parrots in hollow trees, frequently in palms, old woodpecker borings being favored sites, the nests of the Green Woodpecker, especially, which often are drilled in the great bulky white-ant nests, seen high in so many trees.

This will be one of the next birds to become completely extinct in Cuba, as it already is in the Isle of Pines where forty years ago it was to be found in great flocks. The Museum of Comparative Zoölogy now has an adequate representation of a species soon to be a zoölogical rarity.

142. Amazona leucocephala leucocephala (Linné).

CUBAN PARROT; LORO.

The familiar name of *leucocephala* must be restricted to the Parrot of eastern Cuba. In the Province of Oriente Parrots are still to be found in the forests of the lower mountainsides, but everywhere they are growing fewer in numbers year by year.

143. Amazona leucocephala palmarum Todd.

WESTERN CUBAN PARROT; COTORRA.

Todd did not realize from the material at his disposal that the Parrots of western and central Cuba are indistinguishable from Isle of Pines birds. They all average a slightly darker green, have the purplish abdominal patch generally a little darker, and the throat usually of a more intense red, than do Parrots from Oriente. A pair killed in April, 1915, at Palo Alto on the south-central coast of Camaguey, almost in the center of the Island, are more like birds from the Cienaga than like others from the eastern towns of Bayate and Holguin. Although it is probable that the living bird which Edwards figured, and which was the basis of Linné's description, came from Havana, yet there is no objection to this subdivision of the species in the absence of specific information.

For generations Parrots have been caught and shipped to Europe as cage-birds. They nest conspicuously in holes in palm trees, and the groves in which they nest are regularly divided up among the peasant collectors, who get nearly every young bird. Indeed they often open the trees too soon and take young birds which cannot be reared, so that there is great waste. Todd has given an excellent account of parrot-catching in the Isle of Pines (l. c., p. 229), and the conditions described are more or less duplicated in Cuba, wherever there are still Parrots to be caught. In 1917 and 1918, during the period of greatest expansion of cane planting, I saw great numbers of nests destroyed in clearing land. Today it is not so easy to find Parrots as it was only a few years ago. Still they persist better than do the Paroquets, although they are far from shy. There are probably bands still to be found in the more remote districts of all the

Provinces except Havana. I have seen them in western Pinar del Rio, about the Cienaga de Zapata, at San Juan de los Perros, Trinidad, Jucaro and Palo Alto. There are still many bands in the Isle of Pines. They nest from late March until well into the summer. Their flesh is excellent, so good indeed that they sometimes are killed for food when occasionally they invade the populated districts to eat ripe cultivated fruits — a very rare happening today, to be sure. In a few years more Parrots will be excessively rare in Cuba and its dependency.

144. Crotophaga ani Linné.

ANI; JUDIO.

Whether the Spanish name of Judio or Jew is given to the Ani because of its hooked beak or because its oft-repeated cry sounds so like the word, is hard to say. Any visitor to Cuba may decide for himself, because the Jews will be the most conspicuous birds he will see in every pasture lot, even in the very suburbs. They walk about among the cattle, stand upon their backs, and hop clumsily through the underbrush. Their flight is a sort of clumsy volplaning, unlike that of all other birds except the Toucans. They abound wherever cattle are raised, over the whole Island, but are not now seen in the forests or inhabited areas. They are to some extent tick-eaters but forage more among the insects which the cattle disturb into movement as they walk about.

The large, shapeless communal nest, usually placed in a thorny lemon tree or bamboo thicket, is very rarely seen considering the abundance of Anis everywhere. They roost at night not only each band in its wonted resort but the individuals snuggling so closely one to another that every Cuban countryman will declare that they pile up into a heap, several layers sleeping one upon another.

145. Saurothera merlini d'Orbigny.

CUBAN LIZARD CUCKOO; ARRIERO.

The Cuban Lizard Cuckoo is common, widespread and rather tame, far more so than many of its allies upon other Antilles. The Isle of Pines

species, *S. decolor*, has similar habits, is equally common, and is interesting because it has diverged further from the ancestral Cuban prototype than any other bird in the island. The Cuckoos of New Providence may have been derived from Cuba long ago, and they have varied in very much the same way, in both manner and degree. The Cuban bird is tawny, but the bird from the Isle of Pines is bluish. Both resemble the Yellow-billed Cuckoo in build, but are much larger, nearly twenty inches long.

'Arriero,' or Muleteer, is the name generally applied throughout the Island, and it is derived from the harsh, grating call — *tac-o*, several times repeated. In Oriente the call itself supplies the name of 'Taco'; the Indian word *Guicaica*, also given by Gundlach, I never have heard.

Everywhere about the edges of woods, in tangles of vines and creepers, especially on hillsides, the ringing notes call one's attention to a long, clumsy bird which hops constantly upward from limb to limb, and then flutters earthward again, its tail fanned out and its round, inadequate wings flapping desperately. This ceaseless hunt for lizards and locustids goes on hour after hour, save that only during the heat of noon the noisy voice is stilled.

There will always be abandoned coffee plantations and overgrown pastures and many rough limestone hills unfit for cultivation, so the Arriero should ever remain a common bird. *Guajiros* still believe that its flesh has valuable medicinal qualities and not only restores the appetite to convalescent invalids but possesses other virtues too intimate to be described.

146. Coccyzus minor maynardi Ridgway.

Maynard's Mangrove Cuckoo.

Since Ramsden has recorded two specimens of the Bahama Mangrove Cuckoo from near Guantanamo (Auk, vol. 29, p. 398, 1912), it is probable that Gundlach's few records for *C. minor* refer to the same form. He had found it once at Cardenas, at Nuevitas and Santiago de Cuba.

147. Coccyzus americanus americanus (Linné).

Yellow-billed Cuckoo; Primaveva.

The Yellow-billed Cuckoo is a migrant which, according to Gundlach, arrives each spring and is common about the coasts, never being seen in

the mountain forests. Brooks and I never have found it abundant, on the contrary we have seen but very few altogether. That it does occasionally nest in Cuba, I have no doubt. Gundlach states definitely that, while he never has seen the eggs, "which the country people say are green," he has seen a nestling, and has killed in June a female with eggs almost ready to lay. On April 15, 1915, I shot a female near the edge of the Zapata Swamp, not far from the Hanabana River, which I thought was nest-building; unfortunately I did not wait as long as I might well have done before killing the bird. It was late, and I had a long ride home.

148. **Coccyzus erythrophthalmus** (Wilson).

Black-billed Cuckoo.

For the Black-billed Cuckoo there is but one Cuban record — a single specimen killed in May near Cardenas by Gundlach, but in what year I do not know.

149. **Glaucidium siju** (d'Orbigny).

Sijucito; Siju Platanero.

My large series does not bear out the contention of Ridgway and of Todd that the Isle of Pines birds are separable as a valid race. A specimen from Holguin (M. C. Z., no. 114,918) is as much spotted above as the most heavily speckled bird in my Isle of Pines series, and another (M. C. Z., no. 61,072) from the Cienaga is equally maculate. Other specimens show various intermediate conditions, and one from the Isle of Pines (M. C. Z., no. 67,399) is in the gray phase and almost unspotted above. So '*vittatum*' must perforce enter the synonymy.

These little earless Owls are quite tame and are both nocturnal and diurnal. They live, not only in woods, but about orchards and gardens. Indeed their constancy in visiting the dark, shady recesses of banana groves has given rise to the common name of Siju Platanero. They often step or move suddenly, tipping the tail up toward the back and holding it there for some little time. Gundlach says that in courtship

the body is held motionless and the tail waved from side to side. They nest in hollow trees, usually in an old Woodpecker hole. The call reminds one of the Screech Owl's, but is sharper, more shrill.

150. Gymnasio lawrencii lawrencii (Sclater and Salvin).

Cotunto.

The true Cuban Bare-legged Owl is, like the Parrot, to be considered as confined to eastern Cuba. The western birds are identical with the race which has been supposed to be peculiar to the Isle of Pines. The eastern Owls are decidedly more rufescent, more heavily streaked below, and have fewer and much smaller white spots on the mantle, than the birds from the western range. This species is decidedly larger than the preceding and has long legs.

It is by no means a common Owl, and, in my experience, — and I have shot some and seen a good many more, — it is confined to limestone crevices and caves. Gundlach speaks of their sallying forth at night from caves and hollow trees, but this cannot be based on actual observation.

On entering caves in the limestone cliffs one may find an occasional pair in the dusk near the entrance. They take flight and, if the cave's mouth be high, perch upon some lofty shelf; but at times they will fly into the sunlight and perch in a dense bush, if no dark crannies are conveniently accessible, and wait until the intruder has departed. I have found them in most of the limestone sierras of the Island, but probably not over half a dozen pairs in any one year, and apparently no more common in one part of the Island than another. It is well to remember the vast number of caves in Cuba, so after all the aggregate population of these Owls must be considerable.

151. Gymnasio lawrencii exsul Bangs.

My Owls from western Cuba agree well with birds from the Isle of Pines. I have discussed habits and distribution under the preceding heading, only failing to mention that I never have heard the note, which Gundlach describes as a prolonged *cu-co*.

152. Asio stygius siguapa (d'Orbigny).

STYGIAN OWL; SIGUÁPA.

My three Stygian Owls, one from Aguada de Pasajeros, Cuba, and two from the Isle of Pines, are all just alike and are all less richly colored, much grayer, than one (M. C. Z., no. 72,589, formerly S. I., no. 35,123) from Mirador, Vera Cruz, Mexico, Dr. C. Sartorius. The pallid coloring of the facial disc is very noticeable. I have therefore followed Bangs and Zappey, and not Todd, in sustaining this subspecies.

Gundlach speaks of the diminution of the numbers of these Owls as a result of deforestation and of the fact that they are killed whenever possible, as being of ill omen. They are not common, to be sure, but I often have heard them, and have seen a good many flying at night. They become active usually long after dark, hence are much more often heard than seen. Their voice is an oft-repeated *who, who*, like a person calling. I agree with Gundlach that they prefer deep, dark woods; nevertheless my Aguada specimen was shot in a tree by no means dense, in an open pasture. I have seen a few others in the open pine woods of western Pinar del Rio. These Owls might be successfully trapped on posts near big woodlands. This would be well worth trying, as specimens are very rare in all collections. The Owl in the field looks like an earless, and very dark, Short-eared Owl, only somewhat larger.

153. Asio flammeus flammeus (Pontoppidan).

SHORT-EARED OWL; CARABO.

A very accidental visitor. When Gundlach got two from the Havana market in 1849, he recognized them as fortuitous arrivals, but years later, when the resident Porto Rican Short-eared Owl was described, he felt that perhaps his Cuban birds belonged with them. He had no material for comparison, and his first conclusion was correct. However, it is well enough known in Cuba to have a special name.

154. Tyto perlata furcata (Temminck).

CUBAN BARN OWL; LECHUZA.

This is a very polyglot amongst Owls. There is rarely a farmyard which has not near by its great umbrageous ceiba tree. Here the Lechuzas come by night from far and wide to hiss and creak and scold. They scour the *bateys*, as farmyards are called in Cuba, for rats and mice, and fly low over the cane fields on the same quest. They kill some poultry and eat small birds, but on the whole they are really beneficial to man. They are cursed whenever seen, '*Sola vayas, mal acompañada*,' and Gundlach even declares that they are accused of drinking holy oil from the sanctuary lamps of the churches. I have heard them declared to foretell death, but the belief in their thirst for oil seems to have died out. They are commonly found by day about limestone cliffs where the trees give deep shade, in open caves, in belfries and deserted houses, and not rarely under the shady crown of leaves of some high palm. Their eggs are laid on a bare shelf, or in a ruined tower, or hollow palm trunk, early, before the New Year.

155. Chordeiles minor gundlachii Lawrence.

QUEREQUETÉ.

Abounds over the open savannas and cane fields of Cuba from sometimes late February, but more often middle March or April, until the last of August, when it disappears. The winter range is still unknown. It rests on the burning ground in the sun and has about the habits of our Nighthawk. It flies early, often in throngs on cloudy days or after the heavy afternoon showers; at other times it appears just before dark. Its call has given rise to the excellently imitative name of Querequeté. In the Isle of Pines and the regions about Guane and Madruga, and in other localities where there are great semi-arid burning savannas, the Nighthawks swarm, as they do also along the railway lines which offer cinder resting places and where there are not too frequent trains.

It is similar in appearance to our Nighthawk but smaller.

156. Chordeiles minor minor (Forster).

NIGHTHAWK.

Gundlach says that our Nighthawk passes Cuba on migration regularly in October and in May. These dates are not very convincing, nor is Gundlach sufficiently definite for one to be very sure either of the regularity of appearances or of his identification — except that in October, at least, the resident or breeding Nighthawk is absent. That there is something in all this is evidenced by the fact that on May 10, 1904, W. R. Zappey shot a typical Northern bird at Santa Fé in the Isle of Pines (M. C. Z., no. 113,249). This has been commented upon by Todd (l. c., p. 236).

157. Antrostomus carolinensis (Gmelin).

CHUCK-WILLS-WIDOW.

A common annual visitant to the more retired and overgrown pasture lands and stream bottoms. My latest spring Chuck-wills-widow was on May 12, 1916, near Havana. They are more often met with around the Cienaga than elsewhere. The *guajiro* renders the call *Guabairo*, and knows that when he hears it in the spring the birds will be leaving in a few days.

158. Antrostomus cubanensis Lawrence.

GUABAIRO.

While Todd calls this *Setochalcis*, I am far from convinced that there are any real generic characters involved in the separation, and feel that the bird is really congeneric with the other Whippoorwills.

The Goatsucker occurs sparingly all over the Island, but is rare everywhere. I have a breeding pair and the eggs, taken at the Playa del Chivo

near Havana, and another female with eggs from near Cojimar. These, with another female from the Marianao side of Havana, all, perforce, came from more or less open country. A male which I shot February 4, 1913, was flushed in the dense, dark woods near the Cienaga. The Bangs collection contains a beautiful female from Bayate in Oriente.

Gundlach never found the nest or eggs, and Ramsden has not taken the bird in eastern Oriente, although Guantanamo was one of the only two stations where Gundlach had collected it. There is a breeding record from ten miles south of Bayamo (C. T. Ramsden, Auk, vol. 29, p. 394, 1912).

The Guabairo can be identified only when in the hand. It is like a small Chuck-wills-widow, but much darker, often almost black.

159. Todus multicolor multicolor Gould.

Cuban Tody; Pedorera.

The little green, pink-throated Todies live in a variety of situations. They are at home in the wide thickets of beach grape whose stiff, awkward stems and great, round, hard leaves rattle in the trade-wind, and whose fallen leaves give shelter to hosts of ants, scorpions and hermit crabs. Along the arroyos, torrents in the rainy season or mere series of pools in dry weather, are rimmings of vegetation, bamboo, cocoa-plum bushes and larger trees, over-arching the stream and decorated with sprays of fantastic orchids and air-plants. Here through the green density comes the drowsy *coo* of Doves, and ever and anon the Tody flashes and jerks and snaps through the air, its short, erratic flights accompanied by a sharp clicking noise like some exaggerated grasshopper. Todies are anathema to those who keep bees, but they make up for occasional sin by a confiding jollity of mien which makes them beloved by every one. Their note is a repetition of *to-to-to*, said faster and faster until it becomes a rattling chatter. The nest is put at the end of a shallow tunnel, usually in a cut bank and only a few inches deep, and in this the three or four white eggs are laid.

Todies shift from perch to perch and do not hold to one favorite lookout like our Flycatchers. They sally forth and catch their prey in flight, then beat it vigorously on a limb before guzzling it. They are so tame that a long-handled net would often catch one if skilfully wielded.

160. Todus multicolor exilis Barbour and Brooks.

The Todies of eastern Cuba differ in color from those of the west and of the Isle of Pines, by having lighter blue on the sides of the neck and a considerably more restricted and duller yellow patch at the base of the forehead.

They occur in the same variety of situations in lowlands and on limestone hillsides that shelter the western race.

161. Megaceryle alcyon alcyon (Linné).

Belted Kingfisher; Martín Pescador.

A regular bird of passage, appearing in Cuba in varying numbers each spring and autumn.

162. Campephilus bairdii Cassin.

Cuban Ivory-bill; Carpintero Real.

The Cuban Ivory-billed Woodpecker is virtually extinct. There may possibly be a few pairs still living in the pine-clad highlands of Mayarí, where Doctor Ramsden killed his fine pair some fifteen or twenty years ago. He generously gave me the excellent male (M. C. Z., no. 67,779) from San Luis de la Cabezada, which Señor Luis Simon killed in 1907. I never have seen a single individual nor any recent workings. It is improbable that any more specimens ever will be secured.

In Gundlach's time Ivory-bills were to be found in the Organ Mountains north of San Diego de los Baños, in the high woods about the Ensenada de Cochinos, where the memory of the Carpintero Real persists, as well as near Guantanamo. He collected traditions of still earlier occurrence in Banaguises, Calimete and along the Hanabana. He remarks that its voice was like a boy's tin trumpet, that it usually flew in families, and that its eggs had never been found.

163. Sphyrapicus varius varius (Linné).

SAPSUCKER; CARPINTERO.

The Yellow-bellied Sapsucker is the only migrant Woodpecker in Cuba. It is common all winter in the lowlands and always seems more shy than it is here with us.

164. Xiphidiopicus percussus percussus (Temminck).

CUBAN GREEN WOODPECKER; CARPINTERO VERDE or TAJA.

The native Green Woodpecker is really a common bird, though rather retiring and seldom approaching habitations or cultivated lands. It is a true woodland bird, climbing about among the heavy vines and creepers which shroud so many large trees in Cuba as elsewhere in tropical America. At times it also frequents the high mangroves near the shore. Its cry is a sharp *ta há*, not unlike that of the Sapsucker. It is somewhat gregarious, and small companies of from three to five individuals are often seen in the same tree. Its nesting habits are similar to those of other Woodpeckers.

The Green Woodpecker of the Isle of Pines is a good, distinct race, *insulae-pinorum* of Bangs.

165. Centurus superciliaris superciliaris (Temminck).

CARPINTERO JABADO.

A common, noisy bird, albeit a fine-looking one, not unlike our Red-bellied Woodpecker, but much larger and more conspicuously marked. It is really destructive, and well deserves the enmity of every planter. It digs big hollows in ripe oranges, cuts into plantains, and ruins maize ripening on the ear. It is today far more common about orchards and

hedgerows than in wilder tracts, and its noisy rattle may be heard in every fruit grove. The lesser race, *murceus* Bangs, of the Isle of Pines, is only fairly well defined; it is equally common and harmful.

166. Colaptes chrysocaulosus chrysocaulosus Gundlach.

CUBAN FLICKER; CARPINTERO ESCAPULARIO.

The Flicker in Cuba is a rare bird. It loves the wide savannas and open pastures with scattered groves of guasimas and other shabby trees which struggle along on sterile lands. It is far less terrestrial than the Northern bird, but nevertheless probes ant nests at times in the same familiar way. About the estuary of Juan Hernandez and in the neighborhood of Aguada de Pasajeros, Brooks and I have collected perhaps a dozen birds, but elsewhere have only met with an occasional individual, a few in the pine lands of Pinar del Rio and about the Ensenada de Cochinos. Gundlach says it nests in April and May. That it may also bring out young much earlier is shown by our shooting one, just able to fly but full-grown, in early April, 1915.

The only near ally of this Woodpecker is the race *C. c. gundlachi* Cory from Grand Cayman.

The Spanish name is derived from the heavy, conspicuous black patch on the breast.

167. Nesoceleus fernandinae (Vigors).

CARPINTERO CHURROSO.

A very rare species in most parts of Cuba, but locally abundant in the dry pastures of retired communities in southern Santa Clara and Camaguey. Gundlach says that it does not occur in Oriente. I have, however, a single example from Holguin, collected by the late O. Tollin. I never have seen a single one in Pinar del Rio, Havana, nor Matanzas Provinces, although Ridgway ('Birds of North and Middle America,' vol. 6, p. 41, 1914) records examples from Havana, beyond doubt erroneous,

and from San Diego de los Baños. He had only five examples altogether for examination. I have had the good fortune to collect over twenty in the overgrown pastures between Aguada de Pasajeros and Rodas, and I could have procured a fair few more about Trinidad and along the south coast of Camaguey, for I saw quite a number. This form has the appearance of a large Flicker with no black crescent on the chest, rather dingier in color but similar in habits.

168. Priotelus temnurus temnurus (Temminck).

Cuban Trogon; Tocoloro or Toroloco.

While agriculture has robbed most of the central part of the Island of its glory of forest and glade, and replaced the woods with wide reaches of green cane, rippling rhythmically in the brisk trades, still here and there bits of woodland persist. The monotony of the cane fields is broken by the stupendous ceibas which no one dares to cut, for "an image of the Virgin is outlined on the bark" under each great bossed spine, and then there are the groves of stately royal palms, so useful for thatching and for feeding pigs with their fruit, *palmiche*, that no one wishes to cut them down. These wide fields do not attract the Trogons whose haunts are narrowing year by year. Still on the abrupt sierras of limestone and in the lowland thickets which grow on ground not worth the clearing, the noonday quiet is broken by the Trogon's persistent monotone, repeated over and over again. Motionless it sits, upright, for often an hour or more, and then, with tail expanded, it launches forth, poises fluttering before some cluster of fruit or insect-haunted flower and offers for a second a sight gorgeous enough to thrill the coldest and most unkindly critic of the tropics. The call, which has been likened to the word *tocoloro* or *toroloco*, gives the Cuban Trogon its local name.

The three or four white eggs are laid in an old Woodpecker's hole, and how the parents enter and emerge from such a nesting-place without completely divesting themselves of plumage is a complete mystery. No bird is more difficult to skin, for the feathers fall no matter how carefully handled.

The green Trogon, with its rose-pink belly, can never be mistaken for any other bird.

The Isle of Pines race, *vescus* Bangs and Zappey, is tenable but not especially well defined.

169. Streptoprocne zonaris pallidifrons (Hartert).

CUBAN COLLARED SWIFT; VENCEJO.[1]

A dweller, apparently, on the summits of the most inaccessible mountains. I have seen only one band, flying over the *batey* of the San Carlos estate, Doctor Ramsden's former headquarters near Guantanamo. Here, from time to time, he gradually secured the small series from which he spared me a pair. They come hawking to the lowlands after a heavy storm, fly about for a while, and then retire again to the hills. I know of them only in three districts of the Island: the mountains of Trinidad, the Sierra Maestra range and the northern ranges of Moa and Yateras. Nothing is known of nests or eggs. The bird is an enormous one.

The Jamaican Swifts are similar to the Cuban; those from Santo Domingo have been shown by Mr. J. L. Peters to be worthy of subspecific recognition.

170. Nephoecetes niger niger (Gmelin).

ANTILLEAN BLACK SWIFT.

In habits this species is similar to the preceding, and perhaps in Cuba it is even rarer. I have it, thanks to Doctor Ramsden, from San Carlos de Guantanamo, only.

171. Tachornis phoenicobia yradii (Lembeye).

CUBAN PALM SWIFT; GOLONDRINA OR VENCEJO.

Common in savannas of Cuba and of the Isle of Pines, although the first specimens ever actually collected in the Isle of Pines were secured by Brooks at Santa Barbara in March, 1917. The little Palm Swift is gregarious, and the colonies are scattered widely over vast areas of sterile, semi-

[1] The Swallows and Swifts are often confused; all are often called Golondrina. Vencejo, in general use by Spaniards, is applied only to the Swifts.

arid grass lands in which grow scattered clumps of the various palmetto-like palms. Among the dry, pendant, dead fans of these trees the Swifts stick their watch-pocket nests, usually in large colonies. They range abroad, hawking swiftly through the whole day, never alighting to rest except among the hanging leaves of the nesting-tree. As with so many birds, colonies do not occur in all of the localities which strike one as being most suitable, but nevertheless this characteristic little bird, smaller than our Chimney Swift but with similar flight, is one which every visitor may hope to observe, given reasonably good fortune.

172. Archilochus colubris (Linné).

Ruby-throated Hummingbird; Zunzun.[1]

A not uncommon migrant. My observations agree with those of Gundlach, that it usually is seen along the northern coast and in the early spring.

173. Calypte helenae (Lembeye).

Pajaro Mosca; Zunzuncito.

This fairy Hummer was first found by Gundlach in a woodland near Cardenas in 1844 and in 1848, sucking the flowers of the majagua, a tree Hybiscus. Then this tract was cleared and he found none until April, 1858, when he saw them feeding on the majagua and on magueyes or aloes. They had disappeared by the end of April, and Gundlach supposed they retired to the coast cays, for there he found them in July. He observed others in September in the mountains near Guantanamo, and later found that they visited the agaves about Santiago every February. Males in full plumage he always considered very rare.

Every spring the pigmy Hummers visit the agaves near Cojimar, and many are caught with bird lime, but apparently these are always immature examples. Neither Brooks nor I ever saw a single adult until one day we located one, singing a thin, reedy song from the dead topmost twig of a

[1] This and the following species are regularly confused and called Zunzun or Zumbador, indiscriminately. Picaflor or Visitaflor are names in use in Central America and sometimes in Cuba, but used by or learned from Mexicans or others from the mainland.

high tree near the Hacienda Jiquí on Cochinos Bay. It was no easy task to shoot and find so tiny a bird, but we succeeded, and by walking about, ever peering up at high dead twigs, we finally secured a series. The adult males in full breeding plumage evidently prefer the forest, while the others at times invade more open regions. It was not always easy to tell a Hummer from a large insect, so high were the perches which they chose. Moreover, they were singularly lethargic, often sitting, singing from time to time, for long periods at noon. At other times we did not see them.

As is well known, this is one of the smallest Hummingbirds in the world, and one of the most brilliant. It cannot be confused with the other resident species nor with our migrant.

174. Ricordia ricordii ricordii (Gervais).

An excessively common and very fine Hummer. One of the few birds peculiar to Cuba which the casual observer, with but a few days at his disposal, is sure to see. They occur wherever there are flowers, in parks, gardens and in the wild, open country. No more pugnacious bird is imaginable. They hector the little Owls and other Hummers, and will even streak off after a Buzzard if one blunders too near their nest. The type of nest is very like that of our common Ruby-throat, and eggs may be found in any month. Many more males are seen than females, and the sexes associate but little. The story of Gundlach's famous little companion is familiar to many. She lost her nest in a hurricane, and by chance concluded to rebuild on the chandelier of Gundlach's study in Bemba. She raised four broods in this same nest, but never once was her mate seen. The same observer adds that the male does not get full plumage until the third year. The male bird is brilliant green and blue, with a conspicuously forked tail; in the field the female is easily confused with the female Ruby-throat.

175. Tyrannus curvirostris curvirostris (Hermann).

Gray Kingbird; Pitírre.

A Kingbird which is well named *Pitírre* from its call. Abundant everywhere, it apparently arrives in pairs which proceed to choose a nesting site at once. It comes earlier to Oriente than to the western Provinces, according to Gundlach, and it leaves in September. Before migrating they flock,

and then sometimes are shot, for the birds are considered as delicate as Reed Birds and as fat. According to Wetmore the Gray Kingbird does not migrate in Porto Rico.

Its habits are the usual bee-hunting, bullying, and conspicuous ways, so well known in *Tyrannus tyrannus*.

176. Tyrannus tyrannus (Linné).

KINGBIRD.

An excessively rare straggler. Gundlach gives records of a young one taken in September, 1855, and an adult in April, 1851.

177. Tyrannus cubensis Richmond.

PITÍRRE REAL.

This Royal Kingbird, or Pitírre Real, easily distinguishable by its great size, is now rare. It is a lover of deep woods and solitudes, a bird perching on the topmost twig of some lofty forest tree, watchful after insects, lizards and even little birds. It is not fond of the hills but haunts the lowland woods, the very places which now are changing fastest. I shot one once from a boat, as it flew over the Rio San Juan near Matanzas, and Brooks and I have killed a few about the Cienaga. Bryant took it years ago (1864) at Remedios, where it is hardly to be looked for today, and Peters shot two at Preston in 1915. I have seen skins also from a few other localities, among them Holguin and Bayamo. It is found in the Isle of Pines, but is rare there too.

178. Tyrannus melancholicus subsp.

A very rare, accidental straggler from Central America. It was taken first in 1823 by Duke Paul William of Würtemburg, at Cienfuegos, and years later by Gundlach at El Caney. The former bird became the type of Hartlaub's *Tyrannus sulphuraceus*, but no allocation of that name can be made until this type is critically examined. The subspecific identity of Gundlach's specimen also is uncertain.

179. Tolmarchus caudifasciatus (d'Orbigny).

A common and conspicuous denizen of hedgerow, field and farm, showing preference for well-cleared lands. Less brave than its near allies, still it bullies and pesters little birds, and hurries off with loud cries after every Sijú which may appear.

It is another of the residents with which the casual visitor may readily acquaint himself.

180. Myiarchus sagrae sagrae (Gundlach).

BOBITO.

Well named the Little Fool, for a more sluggish and more inane-appearing little bird could not be imagined. The Bobito has no song, but sits about all day long, tail adroop, head pulled down and feathers fluffed, musing out the slow hot hours. Occasionally some insect flying handy by, reminds it that it must eat to live, and for a second it is all vivacity; but its prey once swallowed and its perch resumed, it lapses once more into revery.

The nest is usually in a hollow limb or bamboo stalk; and while Bobitos are very common in all retired, shady coppices, their nests are seldom seen. The bird in the field is more sluggish and smaller than our Great Crested Flycatcher.

181. Myiarchus crinitus crinitus (Linné).

GREAT CRESTED FLYCATCHER.

Only twice observed by Gundlach, once under most extraordinary circumstances. After once collecting the Great Crested Flycatcher at Cojimar, he later heard the same species near La Fermina at Bemba. Indeed the peculiar and unfamiliar call engaged Gundlach's attention for several days, then the bird disappeared. The following year, on exactly the same date, the same note was heard, but this time the bird was located and collected. Was it the same individual?

182. Blacicus caribaeus caribaeus (d'Orbigny).

BOBITO.

What I said regarding another foolish little bird, the *Myiarchus*, applies equally to this Bobito. Similar habits have given it the same name, and no peasant in Cuba knows that there are two different species included. Equally common, alike in habits and rather so in appearance, only somewhat smaller, a remarkable difference is to be seen in nidification. This Bobito creeps into no dingy hole to lay, but builds a dainty structure of vegetable wool, covered with lichens, which, except that it is larger, might easily be mistaken for the finished product of some Hummer's skill.

Birds from eastern and western Cuba are alike; those from the Isle of Pines are a very little smaller, but not recognizable as a distinct race. The Bahaman bird represents a valid subspecies, being slightly larger and more ashy in color.

183. Myiochanes virens (Linné).

WOOD PEWEE.

Another rare straggler which Gundlach occasionally observed in October or April.

184. Sayornis phoebe (Latham).

PHOEBE.

Gundlach once killed an immature Phoebe (February, 1846) and, not being familiar with the species at that time and not knowing that the individual was a straggler, he named it *Aulanax lembeyei*. The type of this name is in his mounted collection in Havana.

185. **Empidonax virescens** (Vieillot).

ACADIAN FLYCATCHER.

A rare accidental visitor, occasionally met with in autumn or in spring.

186. **Mimus polyglottos orpheus** (Linné).

CUBAN MOCKINGBIRD; SINSONTE.

Formerly, according to Gundlach, more common along the south coast than the north, today it is abundant everywhere, except in hilly country. It is preëminently a bird of the plains, of open fields and wide savannas. In March its nesting season begins, and then the males commence their chorus of long and varied song, so gay and bubbling over with sprightly energy that they are universal Cuban favorites as cage-birds, and many are caught for export as well. In habits and nesting they are much like our familiar North American species, and one observes no very noteworthy difference — beyond its smaller and lighter appearance and perhaps a rather softer and even more varied song.

In my large series of skins I have a few from the region of Nipe Bay, which closely approach the race *elegans* of Inagua in characters which set them off sharply from other Cuban birds. One wonders whether perhaps a colony of stragglers from the southern Bahamas may not have reached this district fortuitously and by interbreeding have affected the *orpheus* stock resident there. It is worth adding here also, that W. Cameron Forbes shot two Bahama Swallows from a flock at Nipe Bay, the only station outside the Archipelago where they ever have been found.

187. **Mimus gundlachii gundlachii** Cabanis.

GUNDLACH'S MOCKINGBIRD; SINSONTE PRIETO.

Beyond the fact that this species occurs on the cays of the northern coast, opposite Caibarien and San Juan de los Perros, I know nothing of

it. It belongs to a group characteristic of dry and arid country. Its fine song makes it a favorite cage-bird in Caibarien and Remedios.

It is a large species, darker than the Cuban mainland form.

It may well be noted here, also, that Todd (l. c., p. 251) has mentioned a single example of the North American Mockingbird shot on the Isle of Pines, though so far it never has been secured in Cuba.

188. Dumetella carolinensis (Linné).

CATBIRD; ZORZAL GATO.

The Catbird arrives in Cuba in October and remains until May. It is one of the most characteristic and familiar birds about hedgerows and thickets during its sojourn. It is found even in the heavy woods, but by and large its habits are much the same as when it is in the North.

189. Myiadestes elizabeth elizabeth (Lembeye).

CUBAN SOLITAIRE; RUISEÑOR.

The Ruiseñor of the Cubans is well named, for no bird of the Americas can wear more worthily the style of 'nightingale.' Picture, if you please, a hot and misty dawn, high cliffs with tangled jungle and towering palms. The night and rain have given way to the coppery rising sun which makes each avid clamberer stop willingly to sweat and pant. Suddenly, as the sunlight strikes into a dark ravine, a long, repeated crescendo of such unearthly beauty rings out that one sinks down to rest and drink in the rising flood of antiphonal music. Far and wide, from ridge to higher peak, another bird and then another answering, ring out the limpid, flute-like notes, so serene and yet so sad.

The Cuban Solitaire is a bird of the high limestone mountains. Gundlach likens the tone of its song to the sound produced by rubbing one's wet finger along the lip of a fragile wine-glass — not a bad comparison. The males move but little when singing, and skilful natives catch a few each year by touching the songster's back with a dab of birdlime on the end of a very long wand, and thus secure it.

They command a high price, and fare only moderately well in captivity. The song is never the same when it comes from a cage. The nest and eggs are unknown.

Contrary to Todd's conclusions, the Isle of Pines Solitaire, *M. e. retrusus* Bangs and Zappey, an excessively rare bird, is well worthy of recognition. Its slightly less olivaceous upper parts might not be noticed on a superficial inspection, but the pale ear-coverts wholly lack the tawny or buff suffusion conspicuous in true *elizabeth*, while the very pale and much less noticeable streak before the eye, so different from the richly colored stripe in the Cuban bird, serves also to separate the birds at once. Even were these color characters wholly lacking, the markedly different form of the bill suggests to me the, certainly not fantastic, conclusion that we may be dealing with full species and not races.

In life the Solitaire looks surprisingly like a very fluffy, olivaceous, short-billed Catbird. It is, however, most lethargic in its movements.

190. Sialia sialis sialis (Linné).

Bluebird.

Gundlach killed and mounted one Bluebird in April, 1860. This appears to have been the only record, until on February 24, 1917, W. DeWitt Miller and Ludlow Griscom saw about seven individuals, including adult males, in a suburb of Havana (Auk, vol. 37, p. 140, 1920).

191. Mimocichla rubripes rubripes (Temminck).

Zorzal Real.

The Red-legged Blue Thrush is a common bird. It is seen everywhere in central and western Cuba, hopping about or scratching diligently in the dry leaves of garden thickets and wilder coppices. It may be found also in the woods, but it prefers a lower and more tangled growth and sunshine more easily accessible. Its song is disappointing, less varied and far less musical than that of most Thrushes. A long, sharp screech is often

heard; it serves as an alarm, a challenge for a fight, or as an assembly call. The flight is singularly rapid and direct, but rarely more than a few score yards.

192. Mimocichla schistacea Baird.

This eastern Cuban Thrush, having a white and not a rich buff belly, is so distinct from its occidental ally that I believe it should stand as a full species. I have seen no intergrades, and in every locality in which I have collected or observed, one or the other bird was present and was of typically pure stock. Except for its being perhaps a bit more fond of the forests, this bird does not differ in customs from *M. rubripes rubripes*.

193. Hylocichla ustulata swainsoni (Tschudi).

Olive-backed Thrush.

A rare accidental migrant.

194. Hylocichla minima aliciae (Baird).

Gray-cheeked Thrush.

Another excessively rare straggler.

195. Hylocichla mustelina (Gmelin).

Wood Thrush.

Observed on a few occasions in the beginning of October and in April. Gundlach had seen it near Havana, Cardenas and Santiago de Cuba.

196. **Hylocichla fuscescens fuscescens** (Stephens).

WILSON'S THRUSH.

Gundlach gives no details regarding his record for this species beyond the fact that the identification of all his North American Thrushes had been verified by either Baird or Lawrence.

197. **Turdus migratorius migratorius** Linné.

ROBIN.

Known from a great flight which was recorded by Gundlach. Then, long ago, the Havana market was flooded with Robins sent in by hunters about San Cristobal.

198. **Polioptila caerulea caerulea** (Linné).

BLUE-GRAY GNATCATCHER; SINSONTILLO.

The Blue-gray Gnatcatcher arrives regularly in western Cuba and becomes one of the somewhat unusual but still characteristic birds of the tangles of creepers and vines in woods and of the second-growth vegetation of abandoned fields. It probably is less common today than in Gundlach's time, for while it may be seen every year it does not arrive "in abundance" now. Its habit of creeping about, often head downward, makes it an amusing creature to watch.

199. **Polioptila lembeyei** (Gundlach).

CUBAN GNATCATCHER.

In Oriente, where there are plains with spiny plants or dry savannas along the coasts, this tiny Gnatcatcher may be found. It is confiding, but

in my limited experience rather rare. It is one of the most distinct and local of the autochthonous birds.

200. Corvus nasicus Temminck.

Cuban Crow; Cao Montero.

The Cuban Crow grows yearly less in numbers. Once common everywhere, today its range is very circumscribed. Gundlach killed a few about Matanzas and Cardenas as late as 1850, but for years there have been none within many miles of these towns. The forests on the south coast of Camaguey and the Trinidad hills supported a few Crows as late as 1915, while there were, and doubtless are, numbers still to be seen and heard in the forest about the Cienaga, the Ensenada de Cochinos, and along the line of the Guantanamo and Western Railways, at Bayate and elsewhere. This Crow babbles and chatters in infinite variety, like the Jamaican Crow, and in no wise like any of our Continental forms — except the Raven. While they evidently are dependent upon heavy forest, and disappear as it is cut, still they do occasionally visit the plantations for fruit and grain and to eat the *palmiche* of the royal palm. In the vicinity of wooded mountains the Crows descend at morn and eve to the lowlands, often in good-sized bands, retiring to the highland to pass the noon hours and the night. A few years more of increased forest cutting may add this to the list of extinct birds.

201. Corvus minutus Gundlach.

Little Pine Crow; Cao Pinalero.

Gundlach apparently did not consider this Crow very rare; he knew of it in Pinar del Rio, Yaguaramas and the Trinidad hills. Since his day, however, it had not been seen by naturalists until in 1915 when de la Torre and I found it again. Today it is reduced to a few small bands in the lonely arid hills with scattered pines, called Las Lomas de los Acostas, between Guane and the port of La Esperanza. Here noisy, cawing bands, shrewd and thieving, still visit the few poor little farms, always ready at the

slightest sign of danger to retire to the lonely pine-clad fastnesses where they roost.

The voice of this Crow recalls that of the Fish Crow; the other species, *Corvus nasicus*, cackles and croaks but does not caw. The nest and eggs are unknown. The bird may be expected sooner or later to disappear, but since the territory where it now is found has no agricultural future, the Cao Pinaļero may persist longer than the Cao Montero.

202. Vireo gundlachii Lembeye.

Juan-chivi.

Few Spanish names are more apt than that of Juan-chivi, for the constantly repeated song of Gundlach's Vireo has almost exactly the sound of these words. Abundant, tame and very inquisitive, this is one of the birds met with in every tract of woods and in the *manigua* (second-growth bush) as well. They creep tirelessly through the tangles of vines and creepers, *bejucales*, as such thickets are called, searching for insects, and here also these little green Vireos make their pocket nests in March and April.

Todd's race *orientalis* from eastern Cuba is not worthy of recognition; with a large series before me, and having had the opportunity to study his typical material as well, I find as much and even more difference in pairs of birds from the same locality in western Cuba as between his type and any one of our enormous series. These West Indian Vireos tend strongly toward dichromatism, and while the present species shows this less than does *ochraceus* or *crassirostris*, nevertheless it is perfectly evident. Todd's type was taken in October, and most of the material in American museums available for comparison has been collected between January and May or June. Therefore it is not improbable that this may have misled him. The fact remains that his type and another from Guantanamo can be matched in every respect by specimens from Cojimar (M. C. Z., no. 67,634), and from La Jaimanita (M. C. Z., no. 67,632), both places near Havana; while a pair taken by Zappey at Cayo Bonito (M. C. Z., nos. 113,399 and 113,400) differ as much from each other in color of both the upper and under parts as do any two examples either in Todd's or in my own series.

203. Vireo griseus griseus (Boddaert).

A rare straggler, only twice collected by Gundlach.

204. Lanivireo flavifrons (Vieillot).

YELLOW-THROATED VIREO.

Once killed near Cardenas, by Gundlach, as it passed through on migration. On March 26, 1915, Brooks shot a female (M. C. Z., no. 67,635) in the Caballos Mountains of the Isle of Pines, the first record for that island.

205. Lanivireo solitarius solitarius (Wilson).

BLUE-HEADED VIREO.

Killed once by Gundlach, on the shore of a lake near Cardenas in March, 1844.

206. Vireosylva calidris barbatula (Cabanis).

BLACK-WHISKERED VIREO; BIEN-TE-VEO.

The little Black-whiskered Vireos arrive each spring in Cuba, the Cayman Islands and the Bahamas, as early sometimes as the end of February, but more often in March. They leave again in late August or early September. They come from the south, but curiously enough the bird is not known to have been taken in Jamaica, where a closely allied form is likewise a summer resident. The English creole name of 'Whip-tom-kelly' is a fair imitation of the bird's song, which in Spanish appears as 'Bien-te-veo,' while a Brazilian ally sounds 'Jaõ-corta-paõ' to the local ear.

A slender, grayish Vireo with a conspicuous black streak on each side of the head. It is easily identified.

207. Vireosylva olivacea (Linné).

RED-EYED VIREO.

There is a single example in the Gundlach collection, taken in the Botanical Gardens near Havana in April, but the year is not on record.

208. Bombycilla cedrorum Vieillot.

CEDARBIRD.

Not unfrequently seen while on migration. I have seen them in April feeding in the trees along the Prado in Havana. Gundlach had seen a few in the autumn but more in late April or early May. His records are for Cienfuegos, Alquizar, Matanzas and Havana, and one very late record, May 22, for the Castle of San Severino near Matanzas. They frequent casuarinas and the *laurel de la India*, a gigantic figtree which produces myriads of tiny fruits.

209. Progne cryptoleuca Baird.

CUBAN MARTIN.

The Cuban Martins arrive in the cities in large numbers, and from late February to late August they swarm about their chosen belfries. Santo Domingo church tower in Havana is a great favorite. Saledad in Camaguey, the old church in the plaza at Santa Clara, the Ayuntamiento at Matanzas, the *parroquia* at Guane, the eaves of an old apothecary shop at Sumidero, are all favored haunts. It readily will be seen that these are not advantageous collecting-grounds. We got four one morning at Sumidero; they fell on the sidewalk and much uncomplimentary comment resulted. One I shot flying over woods at Palo Alto, from a few pairs that seemed to be preparing to nest in a great dead ceiba. The people are fond of the birds, and have transferred to this species the familiar legend

of the Crossbill. The crosses which surmount all Latin churches are constantly preferred perches.

Cryptoleuca is very similar in flight and appearance to our Purple Martin, but in the hand the white bases of the interscapular feathers are conspicuous.

210. Petrochelidon lunifrons lunifrons (Say).

Cliff Swallow.

A single Cliff Swallow was killed by Ramsden at Guantanamo November 11, 1911. It was one of a flock which were hawking about with Barn Swallows. There is no other Cuban record (see Auk, vol. 29, p. 396, 1912).

211. Petrochelidon fulva cavicola Barbour and Brooks.

Cuban Cave Swallow; Golondrina.[1]

Mr. Brooks and I have shown (Proc. New Engl. Zoöl. Club, vol 6, 1917, p. 52) that Haiti, Jamaica and Cuba are each inhabited by an easily distinguishable race of Cave Swallow.

In Cuba they arrive in late February and gather in large flocks about the caves in which they nest. Occasionally abandoned buildings are occupied, or even the recesses of a deep veranda, but caves, sometimes open but equally often deep and dark, are the usual breeding-places chosen. A favorite spot is where the river disappears into a limestone cavern right in the town of San Antonio de los Baños. This was an impossible place to shoot, but Brooks and I found that, when we crept into the cave at night and then flashed an electric torch, the birds came in swarms clinging to our hats and clothes, as phototropic as moths. We soon had plenty, chosen by hand. A nesting-place near Bolondron is in a deep, steep, almost perpendicular, tubular cave mouth, which at first looked like a haunt for bats but nothing else. The old wooden hotel at Herradura had a few nesting under the eaves, and swarms inhabit the great caverns under Morro Castle, perched at the mouth of the bottle harbor of Santiago de

[1] All Swallows without exception are called *Golondrina*.

Cuba. The nest is of mud, mixed with grasses and feathers, and is not so enclosed as with our Cliff Swallows. These Swallows, flying mostly at dawn and eve, generally remind one in habits of Collocalias. They look like Cliff Swallows, but lack the forehead marking.

212. Riparia riparia riparia (Linné).

BANK SWALLOW.

Very rare. Gundlach collected two from a band flying over a lake near Cardenas in April, 1845.

213. Hirundo rustica erythrogaster Boddaert.

BARN SWALLOW; GOLONDRINA.

In late August or early September flocks of Barn Swallows pass over Cuba, staying but a few hours or a few days at most. They repass in late April or early May. I have seen them flying back and forth over cane fields and savannas, swarming on the telegraph wires and sometimes very plentiful about the open saw-grass of the Cienaga, crowds one evening filling the air and next morning not one to be seen.

214. Iridoprocne bicolor (Vieillot).

TREE SWALLOW.

Tree Swallows pass through Cuba on the spring and autumn migrations in enormous numbers, and not a few remain through the winter. I shot several on February 6 and 8, 1913, in the Cienaga, and had many chances to get others. W. Cameron Forbes shot one at Nipe Bay on March 8, 1914. A favorite haunt is about the sugar warehouses and factories where for obvious reasons flies abound.

215. Callichelidon cyaneoviridis (Bryant).

BAHAMA SWALLOW.

The first Cuban record was when Forbes, shooting at Nipe Bay, for the Museum of Comparative Zoölogy, killed two Bahama Swallows on March 8, 1914. The species was reported to be abundant at that time. It had never previously been taken outside the Bahama Islands. As I have pointed out under the Cuban Mockingbird, it looks as if there were a little Bahaman colony settled on the Cuban coast at this point.

216. Mniotilta varia (Linné).

BLACK-AND-WHITE CREEPER.[1]

Common in woods and thickets. A few arrive in August, and by September they are very abundant, especially in the overgrown jungles about the Cienaga.

217. Limnothlypis swainsonii (Audubon).

SWAINSON'S WARBLER.

Gundlach records one Swainson's Warbler from Cojimar, and recently (January 18, 1914) Ramsden has collected a male near Guantanamo (Auk, vol. 31, p. 253, 1914).

[1] All of the various Warblers and sometimes other small birds as well are called by the general term of *Bijirita*.

218. **Helmitheros vermivorus** (Gmelin).

WORM-EATING WARBLER.

The Worm-eating Warbler is rather common, and is one of the species that visit Cuba every winter and associate during their sojourn with the native species of *Teretistris*. It climbs about vines and among the hanging, dead palm leaves, in little traveling companies. It is reported very rare in Oriente.

219. **Protonotaria citrea** (Boddaert).

PROTHONOTARY WARBLER.

Observed by Gundlach a few times, always in April. A very rare and irregular vagrant.

220. **Vermivora bachmanii** (Audubon).

BACHMAN'S WARBLER.

Gundlach writes, "During the first years of my residence in Cuba I lived on a coffee plantation near the Rio Canimar (near Matanzas), and later near Cardenas and at various places. I have killed several pairs of this species in majagua trees, into whose flowers they stick their bill for small insects and nectar. Since the cutting down of the *majaguales*[1] I have seen no more of the birds."

[1] The termination *al* signifies 'a place full of.' Thus *majagua*, a certain malvaceous tree, — *majagual*, a grove of majagua trees; *Platano*, a banana — *platanal*, a banana plantation.

221. Vermivora chrysoptera (Linné).

GOLDEN-WINGED WARBLER.

Gundlach killed only two Golden-winged Warblers — near Cardenas in April.

222. Vermivora peregrina (Wilson).

TENNESSEE WARBLER.

A few Tennessee Warblers were once observed and collected near Cojimar by Gundlach, who described both the male and the female plumage but made no further comments.

223. Compsothlypis americana pusilla (Wilson).

PARULA WARBLER.

Parula Warblers visit Cuba annually, and haunt the highest woods. The series Mr. Peters obtained from woodlands near Preston in Oriente belongs to this race. As with most of the other Warblers, they come in August or early September and leave in April.

224. Dendroica petechia gundlachi Baird.

CUBAN MANGROVE WARBLER; CANARIO DE LOS MANGLARES.

The Mangrove Canary, as the Cuban Yellow Warbler is called, is abundant wherever there are heavy high mangroves about the coast. I have found it abundant in eastern and western Cuba, and on the Isle of Pines as well. Gundlach reports it nesting in March. I incline to believe that

May is more usual; and then the nest of grass, small feathers and woolly down, is placed in a fork on some horizontal mangrove limb. The whole life of the species is passed in the mangrove forests.

225. Dendroica tigrina (Gmelin).

Cape May Warbler.

A few arrive from time to time during the autumn, but in February they become really common; they stay until May. They are great flower feeders and haunt aloes and the majagua tree when it is in bloom. Many may be seen about the sisal plantations near Matanzas and in gardens where agaves blossom.

226. Dendroica magnolia (Wilson).

Magnolia Warbler.

An accidental vagrant for which Gundlach has but two records.

227. Dendroica caerulescens caerulescens (Gmelin).

Black-throated Blue Warbler.

The Black-throated Blue Warbler is excessively common, early to arrive and late to leave. It is one of the tamest and most confiding species, and one to be found in all sorts of situations. Early pleasant days in Cuba spent at Edwin Atkins' plantation, Soledad, near Cienfuegos, brought a great surprise, for I found it not uncommon to have these little Warblers enter my room through the great ever open windows and flit from couch to chair. This happened often, notably at Guabairo, not far from Soledad. So inquisitive and confiding are they, that one can hardly recognize the rather retiring dweller in woodland solitude which we know in the North.

228. Dendroica discolor (Vieillot).

Prairie Warbler.

The Prairie Warbler is common from late August or September to April. It is found in cultivated lands and in wild and tangled thickets as well.

229. Dendroica striata (Forster).

Blackpoll Warbler.

Gundlach often collected Blackpoll Warblers on their northward and southward migrations, as they passed Cuba in November and April. They are then neither common nor conspicuous.

230. Dendroica dominica dominica (Linné).

Yellow-throated Warbler.

In spite of Scott's records of *albilora* from Jamaica my series and all the Cuban birds seem to be true *dominica* — if the races are at all separable, which is doubtful.

The Yellow-throated Warbler was the first bird which Gundlach saw after setting foot in Cuba. This was in 1839, in the park in front of Tacon Theatre, now the National Theatre. There is small chance that the experience would be repeated there today. They arrive as early as July, and by August first there are great crowds about; then most pass on, and later return, to go northward in early spring. I have found a few in both February and March.

231. **Dendroica cerulea** (Wilson).

CERULEAN WARBLER.

Gundlach once killed a single Cerulean Warbler in April at Camarioca.

232. **Dendroica virens virens** (Gmelin).

BLACK-THROATED GREEN WARBLER.

A rare species which I never have seen. Gundlach collected Black-throated Green Warblers several times, one on the Isle of Pines, in 1855, at later dates two on the Pan de Matanzas and three in the pine lands of Pinar del Rio.

233. **Dendroica coronata** (Linné).

MYRTLE WARBLER.

Myrtle Warblers are the last of the migrant Warblers to arrive, coming in late November. They return North at the end of March.

234. **Dendroica pityophila pityophila** (Gundlach).

CUBAN PINE WARBLER.

The Cuban Pine Warbler is found to be common, once its haunts are located. It is not found in all the growths of pine. It occurs about San Diego de los Baños, where pines are few, and much more commonly about the pine-clad hills near the mines of Matahambre and Asiento Viejo, all in western Cuba. Contrary to the experience of Gundlach, Ramsden has found it in eastern Cuba in the *pinares* of Mayarí on the north coast of the Province. It does not leave the trees from which it takes its name, and flitting constantly about, it frequents the highest branches.

235. Dendroica palmarum palmarum (Gmelin).

Palm Warbler.

The commonest bird in Cuba, as it is over much of Florida, during the winter months. Its bobbing tail may be seen by every dusty roadside, along fences, in pastures, gardens and in the very cities themselves — if there be a park with any cover. They come in September and retire late in April, the males having begun to assume the nuptial dress just as they leave. The birds seem to be such an essential part of the Cuban winter landscape that it is hard to believe that they are not natives.

236. Dendroica palmarum hypochrysea Ridgway.

Yellow Palm Warbler.

Cory recorded (Auk, vol. 9, p. 273, 1892) both races of the Palm Warbler in a list of birds "actually taken" during a visit he made to Gundlach in the previous winter. It is not improbable that this race may occur occasionally among the vast numbers of *palmarum* that throng the Island every winter.

237. Oporornis formosus (Wilson).

Kentucky Warbler.

The Kentucky Warbler is a rare, accidental visitor. Gundlach found one dead on the roof of a house in Havana in August. It had flown against a white wall. Later he killed another in April at Cojimar.

238. Seiurus aurocapillus aurocapillus (Linné).

OVENBIRD.

Ovenbirds are common all winter. They arrive in late August and early September, and stay until April. They are common in woods, in orchards, about thickets and, especially in Oriente, in coffee plantations, in which they walk about with the mincing gait of a tiny Zorzal, scratching the leaves and peering under chunks and stones for spiders and beetles.

239. Seiurus motacilla (Vieillot).

LOUISIANA WATER-THRUSH.

The Louisiana Water-thrush has been recorded from the mountain streams of the Oriental Province. I have one from Holguin, September 2, 1904.

240. Seiurus noveboracenis noveboracensis (Gmelin).

WATER-THRUSH.

A not uncommon winter visitor. Found about lakes, ditches and river banks, and in the mangroves along the seashore. Todd refers several birds, shot by Link in the Isle of Pines, to the race *notabilis*. The specimen before me, shot by Mr. Peters at Nipe Bay, March 1, 1915, is true *noveboracensis*, and supports Cooke's surmise quoted by Todd, that the West Indian records "unquestionably relate to the Eastern bird."

241. Teretistris fernandinae (Lembeye).

Mingling all winter in bands with many migrant Warblers the two little Cuban Bijiritas are common in woodlands and about old, overgrown

fields. Unlike the migrants, however, they like retired haunts, and do not hop about the houses, much less enter them — as some of their Northern allies do. The two distinct species of *Teretistris* never have been observed to intergrade, and though the exact limits of their ranges are unknown, it is probable that the following form inhabits Oriente only, and this species the remainder of the Island. In summer they are much more retiring and solitary. They nest from late March to May, sometimes with a small, round nest placed on a horizontal branch, but more often in the pendant Spanish moss called *guajaca*, a Tillandsia.

A little, gray warbler, with olive-green back, yellow head and gray belly. The sexes are alike in plumage.

242. Teretistris fornsi Gundlach.

Similar in all respects, as to haunts and habits, to the preceding species, but much more circumscribed in distribution, being found only in extreme eastern Cuba.

A very distinct species this, which differs from the other in having the top of the head gray, not yellowish, and in having the yellow of the throat extended over the belly.

243. Geothlypis trichas brachidactyla (Swainson).

MARYLAND YELLOWTHROAT; BIJIRITA.

Another common winter resident. Found about marshes, in cane-brakes and reed-beds, and in lowland thickets of vines and llianas.

244. Wilsonia citrina (Boddaert).

HOODED WARBLER.

Gundlach occasionally got a Hooded Warbler, always near water and near the ground. They are very rare, and his records are few: one in a garden in Havana, a few pairs in the mangroves near Cardenas and one on

the bank of a stream in the Savanna de Guamacaro. All were killed in April while passing northward.

245. Setophaga ruticilla (Linné).

Redstart; Candelita.

The Redstarts are the first sign to Cubans that the migration is on, and they probably are the very last Northern visitor to leave in the spring. They are excessively abundant in thickets and woods everywhere, even in the outskirts of the cities. Except for the Palm Warbler, no bird is more in evidence during the winter than the Candelita — the little flame. The North American observer never would dream that there could be enough Redstarts gathered together from all the bird's range to make up the hordes which come to Cuba.

246. Cyanerpes cyaneus (Linné).

Blue-headed Honey Creeper; Azulito.

The Blue Honey Creepers are very local. Ramsden showed them to me near Guantanamo in early March, 1915, feeding on the flowers of the cupey (*Clusea rosea*), a parasitic tree which towers far above its host. It also feeds in the majagua blossoms, but though this tree is widespread, the bird is very local. Their erratic appearance accounts for the name of Aparecido de San Diego, but Azulito is more generally used. Many are caught with bird-lime, and for a short while each spring scores are for sale in Santiago and Havana, but in no such number, however, as one may see in May in the market at Panama. Bangs has described the Cuban birds as a local race, *ramsdeni;* yet, loath as I am to part with this friendly name, I must conclude that the Cuban birds are not separable from those of Panama and Nicaragua. If the bird was introduced into Cuba purposefully, this must have been done years ago, for it was well known during all Gundlach's sojourn. He found his first nest in 1844; then it was widespread. Today it certainly is rare, except in Oriente where I have seen it near San Carlos de Guantanamo and near El Cobre. I have heard of it in San Carlos de Luis Lazo and San Diego de los Baños.

This little bird has a sky-blue crown, black body and yellow inner webs to the primaries; the female is dull green.

247. Holoquiscalus jamaicensis caribaeus Todd.

CUBAN WEDGE-TAIL; CHINCHIGUACO.

This race occurs not only in western Cuba but in the Isle of Pines. The Wedge-tail Grackles of Cuba have been in some confusion, which happily has been satisfactorily cleared up by Mr. Peters in his excellent review of the difficult genus. (Auk, vol. 38, pp. 435–453, 1921.)

The Chinchiguacos flock with the Totís, and their habits and haunts are similar. These Blackbirds, however, sing in unison like the Redwings, and in winter assemble in very large bands. They visit bamboo groves or mango thickets near water and often bathe together and afterward sing in chorus — and very agreeably. The flight is rather slow and labored, as if the great, deep tail were too heavy for comfort. It serves the males well in springtime, when their antics during courtship are most bizarre. In one display the head is turned back until it rests between the shoulders, while the tail is fanned.

248. Holoquiscalus jamaicensis gundlachii (Cassin).

HACHUELA.

Todd restricted this name to the bird of eastern Cuba. It is quite similar in habits to *caribaeus*. It is even larger and more handsomely colored.

249. Ptiloxena atroviolacea (d'Orbigny).

CUBAN GRACKLE; TOTI; CHONCHOLÍ.

This Grackle flocks in company with the Wedge-tails, and is excessively abundant and conspicuous during the winter season. In spring the gatherings break up, and the birds pair for nesting. They search thatched roofs

for roaches and cattle's backs for ticks, and haunt the high groves of royal palms for the insects attracted to the flowers and the beetles which harbor in the great clusters of fruit. The two-syllable call-note is not unpleasant and has given rise to the native name Totí. They do not sing in chorus like the Redwings.

In the field this bird looks like a rather small, short-tailed Purple Grackle; it is, however, strictly arboreal.

250. **Icterus hypomelas** (Bonaparte).

Cuban Oriole; Solibio.

The Cuban Oriole is gorgeous and common. It usually is seen in small companies, of adult and immature birds, stabbing into the bases of the flowers. Wire fences are now widely used, and the problem is to find posts which the white ants will not eat. Two plants furnish these, the smooth, red almácigo and the piñon. Both soon take root and grow into trees, so that tall hedgerows take the places of what were once simple fences. The piñon (*Erythrina*) flowers profusely, and the Orioles may be seen laboriously drilling each tubular flower through at the base, in search of little insects and sweet liquor as well. They frequent the majagua, when in flower, and other allied species of Hybiscus, as well as orange and lemon trees. They are fond, too, of soft, ripe fruit, into which the bill may easily be thrust, the favorites being the sweet and sour sops, the anon and guanábana.

The nest, suspended from a palm frond or banana leaf, is the usual beautifully woven pouch. Both male and female take part in drilling the holes from which are woven the suspending threads, shredded out from a dry, dead palm leaf.

The adult birds of both sexes are uniform black, the wing-coverts, lower back and thighs brilliant yellow. Immature birds are more or less dusky olive-green.

251. **Icterus cucullatus cucullatus** Swainson.

Hooded Oriole.

Gundlach reported it as having twice been seen, once in 1856 and again in April, 1859. This is possibly an erroneous record; certainly it is the only one for the Hooded Oriole from the Antilles.

252. **Icterus galbula** (Linné).

BALTIMORE ORIOLE.

Never seen in autumn, but occasional individuals have appeared from time to time, both adults and birds in immature plumage, usually in April and in company with native Orioles or with migrant Tanagers.

253. **Icterus spurius** (Linné).

ORCHARD ORIOLE.

The Orchard Oriole appears occasionally in spring in company with Baltimore Orioles or alone. It seems possible that they are regular migrants, and have been overlooked among the native Orioles in immature dress.

254. **Agelaius humeralis** (Vigors).

CUBAN REDWING; MAYITO.

The Mayitos abound in winter in great tame swarms, and haunt dooryards and gardens, whispering and wheezing metallically, and the volume of sound is very great. In the spring the males seek mates and the pairs split off and nest in April and May. They build, on palm fronds or on clumps of air plants, a nest of grass and Spanish moss lined with hair and vegetable wool.

Formerly they did great damage in the rice fields, but today, beyond raising an unconscionable racket, they are very pleasing and ornamental neighbors.

This is the black bird with a tawny shoulder-marking and with the female black also, but still having a shoulder patch, though less extended and often much invaded with black feathers.

255. Agelaius assimilis assimilis Lembeye.

CUBAN SWAMP REDWING; MAYITO DE LA CIENAGA.

Until Brooks and I re-discovered this species in the Cienaga de Zapata, not far from the Laguna de Punta Gorda or where the Rio Hanabana enters the Swamp, this Swamp Redwing was known only from the small series which Gundlach collected. We observed one once in the swamp near Cardenas in 1917, and a very few evidently remained there where Gundlach found it abundant in 1842 and 1844. One great band, seen by us day after day in the late afternoon, frequented a small group of trees near the open Cienaga. Here they came from the far horizon to roost, perhaps the whole species population together. Singing in chorus, they could be heard at a great distance. I found the flock at the same spot three different years, and the last time I watched it diminish day by day, in April, as the males, assuming fresh breeding plumage, mated and moved off, to build in the high rushes. Here the scattered pairs pass the summer. Brooks and I have made a good series of skins of this hitherto excessively rare bird.

This bird looks like our familiar Redwing, only it is smaller, and the female is uniformly coal-black.

The birds from the Cienaga of the Isle of Pines, which Bangs has separated as a race, *subniger*, do not differ from the Cuban birds in color characters as we first supposed, but the race is nevertheless, and in spite of Todd's statements, perfectly valid. The Isle of Pines birds all have a rounded, and the Cuban birds a flattened, culmen. I disagree most emphatically with the attitude which tends to consider only color characters as the basis for taxonomic separation of races.

256. Xanthocephalus xanthocephalus (Bonaparte).

YELLOW-HEADED BLACKBIRD.

There are two instances of the occurrence of the Yellow-headed Blackbird, Gundlach's specimen, now in his cabinet, which came from the Havana market, and Ramsden's record for Guantanamo (Auk, vol. 29, p. 103, 1912).

257. Sturnella magna hippocrepis (Wagler).

CUBAN MEADOWLARK; SABANERO.

The Cuban Meadowlark is more common and tamer than our own, and in the field is very similar in appearance. It is to be seen everywhere in the drier and more open portions of the Island. It does not, of course, frequent cane fields, but pastures and savanna lands swarm with these very musical and engaging Larks. Their nest is similar to that of the Northern species. The call is a more prolonged whistle, and is less broken into several notes than with our birds.

As Todd has shown, *hippocrepis* is surely most closely related to *argutula* of Florida.

258. Dolichonyx oryzivorus (Linné).

BOBOLINK; CHAMBERGO.

Gundlach said that it passed through Cuba in great numbers in October and again in May. Formerly, when rice was cultivated in the Island, these birds did much damage and spent some time in the rice fields, to the disgust of the planters. Now this does not occur, and the reduced numbers which migrate through the Island do not tarry long and find but little to attract them in the open pastures and marshes. The Chambergos are well known to be delicious, as with us.

259. Spindalis pretrei (Lesson).

CABRERO.

I never have found the Cuban *Spindalis* a common bird, although Gundlach says it was rather abundant in his time. It frequents overgrown hillsides and rather wild tangles in old pastures, and the edges of big woods. One always finds it in pairs, and one is always surprised that it shows no fear of man. It is persistently trapped, — or rather was,— and still is a favorite cage-bird, sought after for the aviaries so many Latin-Americans maintain among the shrubs and palms which decorate and shade the *patio*.

This fruit-eating Tanager is easily recognized by the black head, with conspicuous white stripes over the eye and along the side of the head, the rufous-orange collar, rump and chest; the back is olive-green. The female is almost uniform plain olive.

260. **Piranga rubra rubra** (Linné).

SUMMER TANAGER.

Seen in small numbers in spring and autumn as they pass over Cuba on migration. I have observed the bird but two or three times.

261. **Piranga erythromelas** Vieillot.

SCARLET TANAGER.

Neither this species nor the Summer Tanager is known to the natives at all. The Scarlets are sometimes seen in company with the other species, and are always rather more abundant. Both birds pass through Cuba at the same times, usually in September and April. I have seen them only in spring.

262. **Chondestes grammacus grammacus** (Say).

LARK SPARROW.

The Lark Sparrow has been taken once at Guantanamo, in 1911, by Doctor Ramsden (Auk, vol. 29, p. 395, 1912).

263. **Passerculus sandwichensis savanna** (Wilson).

SAVANNA SPARROW.

The Savanna Sparrow is rare. A few individuals may occasionally be seen during the winter in open pastures or savannas, usually singly.

264. Ammodramus savannarum australis Maynard.

Yellow-winged Sparrow.

The Grasshopper or Yellow-winged Sparrow spends the winter in Cuba, and I strongly suspect that some individuals are resident. My examples from eastern and western Cuba, however, cannot be separated from this race. The local name of Chamberguito, the diminutive form of the name used for the Bobolink, while in use in Gundlach's time, is never heard now.

265. Spizella passerina passerina (Bechstein).

Chipping Sparrow.

There is only one record for the Chipping Sparrow, a female which Gundlach shot on a fresh-water marsh near the sea, probably north of La Fermina where he labored so fruitfully and for so many years.

266. Zonotrichia leucophrys leucophrys (J. R. Forster).

White-crowned Sparrow.

A record, the "White Crowned Sparrow in Cuba," was made by Ramdsen in 1911 (Auk, vol. 28, p. 488, 1911). Cory while he was in Cuba bought a partially albino Sparrow of this species, which was said to have been trapped near Havana (Auk, vol. 9, p. 273, 1892).

267. Tiaris olivacea olivacea (Linné).

Common Grassquit; Tomeguin de la Tierra.

The little Common Grassquit is very common everywhere. Jaunty, confiding and with a chirping, insect-like call, little bands may be seen

in every dry hedgerow and thicket all the year through. For while they nest during every month of the year, and Brooks and I have found fully fledged young in January, February and March, still the birds which are not paired for immediate nesting are banded into the little itinerant companies that never fail to thrill the newcomer to *el campo de Cuba.*

These little Grassquits are small, olive-gray, sparrow-like ground Finches with very short tails and with a black mask and cheek and a yellow spot on the throat.

268. Tiaris canora (Gmelin).

Melodious Grassquit; Tomeguin del Pinar.

Why the Melodious Grassquit, which does not sing, should be called by the Cubans Tomeguin del Pinar, I cannot say. The Spanish name is fully as inapt as the English, as it implies that the bird lives in the *pinares* or pine lands, which is entirely incorrect. While it is more common in western Cuba than elsewhere, I have specimens from Luis Lazo and Holguin, and from Lake Ariguanabo and Guaro on Nipe Bay. It is far less abundant than the other Grassquit, but often is seen associated with it in flocks, as well as banding by itself. Both species are similar in habits, make ideal cage pets and, be the aviary large, both will breed in captivity.

It is easily distinguished from the Common Grassquit by having much yellow on the sides of the neck, indeed tufts of long feathers, and a yellow stripe behind the eye.

269. Melopyrrha nigra (Linné).

Cuban Black Finch; Negrito.

A rather common and quite active and engaging little tramp, fond of the dusty tangles and thickets in dry pastures and arid fields. Gundlach speaks of their moving about in small companies, and often in company with other birds, but this is the very reverse of my experience. The Negrito sings nicely and thrives in captivity, and while probably as abundant today as ever it was, still it is now certainly inclined to be rather shy and solitary.

An unmistakable little Finch, deep black with white axillars, under wing-coverts and inner webs of primaries and secondaries, which are very conspicuous in flight.

270. Passerina cyanea (Linné).

Indigo-bird; Azulejo.

Another bird of spring and autumn passage, and one which some years must be rather abundant and may make a stay of some duration. A very considerable number are often on sale in the bird stores, and they are great favorites as cage-birds and apparently thrive.

271. Passerina ciris ciris (Linné).

Nonpareil; Mariposa or Nonpareils.

A few Painted Buntings winter in Cuba, but in my experience they are very few and, as Gundlach says, very shy.

272. Guiraca caerulea caerulea (Linné).

Blue Grosbeak.

Gundlach remarks that the Blue Grosbeak appears occasionally in April along with the migrating Tanagers, but that it is excessively rare.

273. Hedymeles ludoviciana (Linné).

Rose-breasted Grosbeak.

Seen for a few days each year in October and April during the rush periods of migration when, twice each year, the avifauna of Cuba offers one of the most remarkable medleys of Northern and tropical types which can be seen anywhere in the world.

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